United States
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Economic
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Service

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February 1982

Feed

OUTLOOK & SITUATION

Table 1.--Feed grains: Marketing year supply, disappearance, area and prices, 1977-81 1/
(corn, sorghum, oats, barley)

Year 2/	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned 3/	Privately owned 4/	Total
	Million metric tons													
1977/78	29.9	205.3	0.3	235.5	13.6	4.8	1.5	117.9	137.8	56.3	194.1	0.7	40.7	41.4
1978/79	41.4	221.5	0.3	263.2	14.4	5.1	1.4	135.9	156.8	60.2	217.0	3.7	42.5	46.2
1979/80	46.2	238.2	0.3	284.7	15.7	5.2	1.4	138.7	161.0	71.3	232.3	7.7	44.7	52.4
1980/81 5/	52.4	198.0	0.3	250.7	17.2	5.3	1.3	123.0	146.8	69.3	216.1	7.1	27.5	34.6
1981/82*	34.6	248.4	0.3	283.3 (± 8)	18.4	5.3 (± 1)	1.4	128.7 (± 6)	153.8 (± 6)	64.6 (± 6)	218.4 (± 11)			64.9 (± 9)

	Area				Yield	Index	Government support program
	National program	Set-aside and diverted	Planted	Harvested for grain	Per harvested hectare	Average price received by farmers 6/	Total payments to participants
	Million hectares				Metric tons	1977=100	Million dollars
1977/78	36.0	---	52.4	43.9	4.68	102	7/ 570
1978/79	39.4	3.4	50.3	42.7	5.19	113	8/ 1,023
1979/80	44.3	1.9	48.1	41.5	5.74	125	8/ 247
1980/81 5/	42.7	---	49.1	41.1	4.82	154	9/ 404
1981/82	42.5	---	50.0	43.3	5.74		7/ 363

1/ Aggregated data on corn, sorghum, oats, and barley. 2/ The marketing year for corn and sorghum begins October 1; June 1 for oats and barley. 3/ Uncommitted inventory. 4/ Includes total government loans (original and reseal). 5/ Estimated. 6/ Excludes support payment. 7/ Deficiency and disaster payments. 8/ Deficiency, disaster, and diversion payments. 9/ Disaster payments. *Reflects CRB estimate of root mean square error' for production and comparable estimates of variability for other items. Chances are about 2 out of 3 the final outcome would fall within the ranges.

In This Issue

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Summary

U.S. Feed Grain Stocks Build as Demand Remains Sluggish

A sharp increase in 1981 U.S. feed grain production and weak demand are pushing ending stocks to an estimated 65 million metric tons, 30 million above a year earlier. As of January 1, feed grain stocks totaled 205 million tons, 19 percent more than a year earlier. Corn stocks, at 6.9 billion bushels (175.3 million metric tons), were 18 percent above January 1, 1981. Ending stocks of corn are forecast at 2 billion bushels, (51.5 million metric tons), nearly double October 1, 1981. Over three-fourths of the carryover may be in the farmer-owned reserve or owned by the Commodity Credit Corporation (CCC). So, "free" corn stocks could be lower than during the previous year.

Even with tight farmer holdings and heavy placements under reserve loans, feed grain prices will average well below last season. In January, the index farm prices for feed grains was more than a fifth below a year earlier, and the average corn price, at $2.40 a bushel, was down even more sharply. However, as free stocks tighten, the market will grow more sensitive to changes in this season's demand and 1982 crop prospects. Corn prices are expected to strengthen during the balance of 1981/82, averaging $2.40 to $2.55 for the season, compared with last year's $3.11.

To bring supplies into better balance with demand, the USDA announced on January 29 a voluntary 10-percent reduced-acreage program for 1982-crop feed grains. Only those who participate will be eligible for program benefits, such as target price protection and CCC commodity loans. The 1982 target price for corn is $2.70 per bushel, and the national loan rate is $2.55. The reserve loan rate is $2.90, and entry into the reserve is permitted at harvest. The trigger price at which farmers may take out their corn without penalty is $3.25. Program benefits for the other feed grains are also higher than for the 1981 crop.

Total 1981 production of U.S. feed grains is estimated at just over 248 million metric tons. With a carryin of nearly 35 million tons, total supplies are expected to be

over 283 million, nearly 13 percent larger than last year. The 1981 corn crop is estimated at a record 8.2 billion bushels (208 million metric tons), 23 percent above last year's drought-reduced outturn. With stocks of more than 1 billion bushels on October 1, the total corn supply will likely be more than 9.2 billion bushels (234.6 million metric tons), up 12 percent from a year earlier.

Feed grain disappearance is expected to total about 218 million metric tons in 1981/82, just 2 million above the previous year. Total domestic use will be up slightly from last season—despite reduced livestock production—but exports are expected to drop. During October-December, exports slipped to 16.6 million tons, down 3.9 million from a year earlier. As of February 11, outstanding export sales for delivery this season were 9.4 million tons, compared with 22.2 million a year earlier.

Corn disappearance should total 7.2 billion bushels (183.1 million metric tons) in 1981/82, a slight decrease from last season. Domestic feed and residual disappearance during October-December was 6 percent above a year earlier, but for the year, the increase may only be 3 percent, because poor feeding margins will likely limit gains in feed use. Exports will likely decline 8 percent from last year because of sluggish import demand and credit problems in several countries. Greater use of corn for gasohol and sweetener production will likely boost domestic food and industrial use to 785 million bushels (19.9 million metric tons), 50 million above a year earlier.

Processed feed supplies are also up from last year. Of the high-protein feeds, oilseed meal and grain protein supplies have increased, while animal protein feeds have decreased. Total supplies of other processed feeds have also dropped.

Silage supplies are above last year's drought-reduced levels. However, the sorghum forage acreage was record-low. Pasture and range conditions averaged 82 percent of normal, 7 percentage points above the 1970-1980 average.

Hay production is estimated at 143 million short tons (129.8 million metric tons) in 1981, up 9 percent from 1980, but 3 percent below the 1979 record. With an estimated carryover of 25.4 million tons on May 1 1981, total supplies are forecast at 169 million, for the year, 3 percent above a year ago. The average price during May 1981-January 1982 was $66.90, compared with $71.14 a year earlier.

Foreign coarse grain production is projected at 521 million metric tons, down about 1 percent from 1980/81. While estimates for Canada, Australia, and Thailand are substantially above a year ago, crops in Argentina and South Africa are expected to be below last year's records. Poor economic activity in major importing countries continue to depress world coarse grain trade, which is forecast, at 103 million tons during July 1981-June 1982, slightly below last season. The Polish situation, Soviet coarse grain imports, and the outcome of harvests in the Southern Hemisphere will be significant factors through the rest of the marketing year. World use will likely fall well short of production, increasing ending stocks to 108 million tons. Virtually all of the expansion will occur in the United States.

A survey taken around February 1 indicates that U.S. farmers intend to plant 84.7 million acres of corn, up 1 percent from last year's 84.2 million. The intended sorghum acreage of 15.7 million is 2 percent below a year earlier. Producers indicated plans to seed 14.7 million acres of oats in 1982, 8 percent more then last year. Nearly 10 million acres of barley are planned for 1982—a 3-percent increase.

Because the 1982 Feed Grain Program was not announced until late January, February planting intentions may not fully reflect farmers' participation in the program. Nevertheless, the indicated acreage is a starting point for developing forecasts of 1982 plantings.

This issue of the Feed Situation includes a discussion of the feed grain provisions of the Agriculture and Food Act of 1981 and two special articles: Feeding of High-Energy Concentrates and Corn Marketing Patterns in the United States.

Feed Situation

SITUATION AND OUTLOOK FOR FEED GRAINS

Corn

Use to Rise Marginally; Stocks Up Sharply

Corn disappearance during 1981/82 may total 7.21 billion bushels, slightly below 1980/81. Movements have been light through the first quarter, but exports are still expected to total 2.175 billion bushels, 8 percent below a year ago. Increased use of corn for gasohol and sweetener production is expected to boost domestic food and industrial use to 785 million bushels, 50 million above 1980/81.

Although livestock numbers are expected to decline for the 1981/82 feeding year, feeding rates may exceed last year's levels because of the more severe winter and slightly improved feeding margins. Feed and residual disappearance is estimated at 4.25 billion bushels, up 3 percent from a year ago.

With the corn supply 12 percent above a year ago and disappearance to be virtually unchanged, ending stocks will likely rise sharply. Ending stocks for 1981/82 are placed at slightly over 2 billion bushels, 1 billion above 1980/81. This forecast represents 28 percent of crop-year utilization. In the most recent 4-year period, the ending stocks/use ratio averaged 18 percent, including a 1980/81 ratio of 14 percent.

Record Corn Stocks on January 1

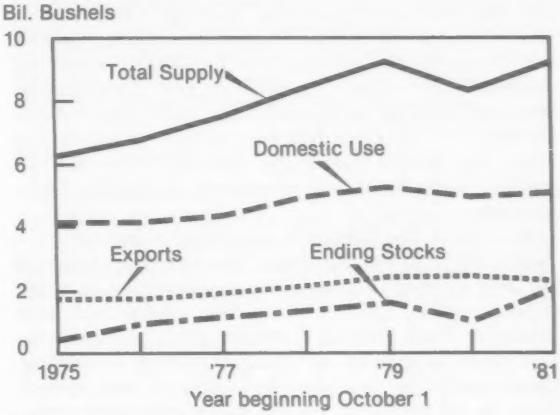
Corn stocks on January 1, 1982, totaled a record 6.9 billion bushels, up 18 percent from a year ago, but only slightly above January 1, 1980. Indicated disappearance during October-December 1981 totaled 2.335 billion bushels, down 3 percent from the comparable quarter a year earlier. Exports were weak, while implied domestic feed and residual disappearance was 6 percent above a year ago, boosted by the larger supplies and sharply lower corn prices.

Prices Weaken

Corn prices weakened starting last summer, as crop prospects improved and demand prospects deteriorated. The prospective stock buildup, coupled with light export shipments, depressed market prices. Poor feeding margins and high interest rates discouraged livestock feeders. The only aspect of market strength has been the reluctance of farmers to sell corn and the accompanying movement of corn into the farmer-owned reserve program. Strength from the livestock and poultry sectors may come later in the marketing year if feeding margins improve. Currently, the possibility of price strength is focused on developments in international markets, planting and growing weather, farmers' extensive use of the reserve program, and farmer participation in the acreage reduction program for the 1982 crop.

Even though ending stocks are projected at record levels, free stocks are getting tighter as the use of the farmer-owned reserve continues. The result should be some price strength as the season progresses. Prices at the farm are likely to average $2.40 to $2.55 per bushel this season, compared with the record $3.11 in 1980/81. For the first quarter of the crop year, farm prices averaged $2.39. There has been virtually no change so far in the second quarter.

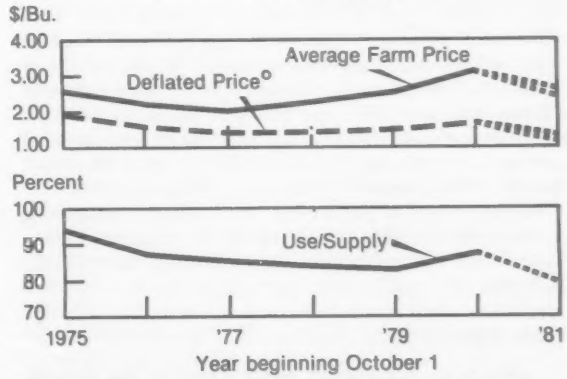
Corn: Supply and Utilization



1980 Preliminary. 1981 Projected.

USDA Neg. ERS 282-82 (2)

Corn: Price and Use/Supply Percentage



°Average farm price (crop year) divided by implicit price deflator for personal consumption expenditures (1972 = 100, calendar year).
1980 Preliminary. 1981 Projected.

USDA Neg. ERS 283-82 (2)

Review of Record 1981 Crop

For the 1981 corn crop, both yield and production were records. Production, at 8.201 billion bushels, was up 23 percent from last year's drought-stricken crop and 3 percent above the previous record in 1979. The crop was seeded late in the Eastern Corn Belt, but excellent growing conditions during the season resulted in a record U.S. yield of 109.9 bushels per harvested acre, 18.9 more than a year ago.

Although planted area, 84.2 million acres, was virtually the same as last year; acres harvested for grain were up 2 percent at 74.6 million. The proportion of planted acres harvested for grain was 89 percent, 2 percent more than in 1980. Abundant rain fall meant less abandonment and increased vegetative growth. Consequently, less acreage was needed to meet silage demands.

The planting season began under generally favorable conditions, except in Indiana and Ohio, where excessive rains delayed plantings. In these two States, planting continued into July, with farmers switching to short-season varieties. Even then, not all acreage intended for corn was planted to that crop. Although the Corn Belt received abundant rainfall and moderate temperatures were favorable for growing corn, crop development and progress lagged behind normal for most of the season. With the exception of Indiana, Ohio, and South Dakota, all States in the Corn Belt had record-high yields this year. The Eastern States also had good crops, but dry weather in the Southeast, particularly in Georgia, limited yields.

Harvest in the Corn Belt was delayed by cool, wet weather that slowed maturity. However, the frost held off until October in most areas, enabling corn to reach maturity. Mild, dry weather in late October and early November dried fields and lowered grain moisture content enabling growers to spend long days harvesting. Consequently, harvest was finished near the normal time. In the Southeast, the dry weather hastened maturity, and harvest proceeded ahead of normal. Overall, it was an excellent year, with good growing conditions and record yields in many States.

Corn Production Costs Up

National average nonland costs per planted acre of corn in 1981 are estimated at $246, 15 percent above 1980. Because average yield per planted acre increased 20 percent from 1980, per bushel costs were down 11 cents from the $2.35 in 1980. Total costs, including an average land charge, are estimated at about $2.90 per bushel in 1981, compared with nearly $3.10 for 1980.

Nonland costs of production are expected to continue to increase in 1982, perhaps by 6 to 12 percent. Per bushel costs will, of course, depend heavily on the average yield.

Grain Reserve Corn

Early in the crop year, participation in the farmer-owned reserve was lighter than anticipated. However, with persistent low market prices and weak demand, movement of corn into the reserve suddenly picked up, and the amount of grain going into the reserve is now exceeding early-season expectations. As of February 17, there were about 1.11 billion bushels of corn in the reserve, with 1.250 billion expected by October 1, 1982. If prices remain depressed, the likelihood of forfeitures on regular CCC loans for the 1981 crop will increase. In addition, approximately 40 to 80 million bushels of 1980-crop extended reserve loans are expected to be forfeited by October 1. Thus, the CCC inventory is forecast at 315 million bushels, up from 238 million a year ago.

Sorghum

Production and Use Rebound

The 1981 U.S. sorghum crop totaled 880 million bushels, up 52 percent from 1980's drought-stricken production, but still 5 percent below the 1973 record. Total area planted to sorghum equaled 16 million acres, up 2 percent from 1980. Area harvested for grain was 13.7 million acres, compared with 12.5 million in 1980. Favorable growing conditions in the major producing States pushed the U.S. average yield to a record 64.1 bushels per acre, 17.8 above last year's average and 1.4 above the previous record set in 1979.

The 1981/82 sorghum supply of 989 million bushels is 36 percent above 1980/81. The result will be greater total use but lower prices. Because of weak world grain demand, exports are expected to be 275 million bushels, a 25 million drop from last season. Domestic use is likely to be 411 million bushels, 93 million above last year due to the larger supplies, weaker prices, and abnormally low feed usage in 1980/81. Disappearance during October-December totaled 310 million bushels, 18 percent above a year ago.

Huge Carryover; Prices Low

This season's carryover is projected at 303 million bushels, nearly triple a year ago. Sorghum stocks on January 1, 1982 were 679 million bushels, 46 percent above a year earlier. In response to improving crop prospects and slackening demand, sorghum prices began weakening last summer. However, sorghum reserve entries as a percentage of production have been relatively higher than corn, and the market has shown evidence of some price strength. The October-December average farm price was $2.18 per bushel. The December price averaged $2.21, and the mid-January price was $2.26. Farm prices this season are likely to average $2.25 to $2.35 per bushel, compared with $2.94 in 1980/81. Prices in the first 5 months of the marketing year have averaged well below the $2.55 per bushel target; therefore, eligible producers will receive deficiency payments totaling around $200 million in early April.

Barley

Supply and Use Up Sharply

Production of barley in 1981 was also a record at 478 million bushels, 33 percent more than in 1980 and 25

percent more than in 1979. The larger crop resulted from increased harvested acreage plus record yields in some of the major producing States, mainly North Dakota and Minnesota.

Barley disappearance for 1981/82 is projected at 475 million bushels, 12 percent above a year ago. Domestic feed and residual disappearance likely will be 200 million bushels, an increase of about 26 million. Exports are expected to rise by 23 million to 100 million bushels. Indicated disappearance during October-December 1981 was 121 million bushels, 33 percent above last year, due in part to increased barley exports.

Stocks to Build Slightly; Prices Strengthen

Ending stocks for 1981/82 are forecast at 151 million bushels, 14 million bushels over year-earlier levels. The stocks-to-use ratio is 32 percent, unchanged from 1980/81. Barley stored in all positions on January 1, 1982 totaled 332 million bushels, 10 percent more than a year earlier, but 9 percent less than on January 1, 1980.

Farm prices of barley likely will average $2.45 to $2.55 per bushel in 1981/82, down from $2.85 a year ago. Barley prices during July-October 1981 averaged $2.40. In November and December, the average price was $2.49—the same as the mid-January price. Producers received about $45 million in deficiency payments in early December, because prices for the first 5 months of the marketing year averaged 11 cents below the $2.60 target.

Oats

Production to Fall Short of Use

Oat production in 1981 is estimated at 508 million bushels, 11 percent greater than the 1980 crop, but 4 percent less than the 1979 outturn. Except for the 1980 crop, this was the smallest production since 1881. An expansion of 9 percent in harvested acres from 1980 and a 1-bushel increase in yield caused production to rise from a year ago. Acres abandoned and used for purposes other than grain accounted for 31 percent of the planted area, compared with 35 percent in 1980.

Oat disappearance is projected at 520 million bushels in 1981/82, slightly above a year ago. Domestic feed and residual disappearance will likely be up slightly, and exports down.

Ending stocks for 1981/82 are forecast at 166 million bushels, 11 million below a year earlier. The stocks-to-use ratio is 32 percent, down from 34 percent in 1980/81. Oats in all storage positions on January 1, 1982, totaled 365 million bushels, down 7 percent from a year ago, and the lowest amount in storage on January 1 since records began in 1942. Indicated disappearance during October-December 1981 was 93 million bushels, down 1 percent from the comparable period last year, but 2 percent above the October-December 1979 disappearance.

Prices—Strongest Among the Feed Grains

Farm prices of oats will likely average $1.80 to $1.90 per bushel in 1981/82, up from $1.79 last year. Oat prices during July-October 1981 averaged $1.77. In November and December, the average price was $1.91. In mid-January, farmers received an average $1.94.

DOMESTIC FEED SITUATION

Poor returns since 1979 and a pessimistic economic outlook for much of 1982 are expected to hold down meat production in 1982. Red meat output for October-December 1981 was even with a year ago, and through 1982 is expected to remain below a year earlier. The sharpest cutback is occurring in the hog sector, with production expected to decline 9 to 10 percent. The number of cattle on feed is well below a year earlier, and marketings are expected to be about last year's level. Broiler production will likely rise only 1 to 3 percent in 1982, compared with a 6-percent gain in 1981. Turkey production may decline 3 to 5 percent as producers cutback after 1981's low prices.

Livestock and poultry prices are expected to strengthen modestly in 1982. The strongest increases will occur in hog prices, given the large expected drop in production. Feeding margins should begin to improve later this spring. However, uncertainty concerning economic recovery in the second half of the year and in early 1983 will likely restrict livestock and poultry expansions.

Although grain-consuming animal units (GCAU's) are expected to drop this season and the number of animals fed during October-December 1981 was similar to a year ago, feed and residual disappearance is estimated to rise 3 percent to 4.25 billion bushels. Large on-farm availability of feed grains, low grain prices, and a more severe winter suggest increased feeding rates.

First-quarter feed and residual disappearance was 6 percent above a year ago and 38 percent of this season's feed and residual estimate. Based on first-quarter slaughter weights for cattle and hogs and available protein feed supplements, hay, and silage, the October-December disappearance appears quite large. However, grain availabilities, livestock/feed price ratios that have generally trended up since summer as grain prices declined, lower first-quarter interest rates, and the possibility of a larger-than-usual residual due to the larger crop may all have contributed to the increased disappearance.

Concentrate Feeding

Concentrates fed during October-December 1981 totaled about 60 million metric tons, compared with 52 million a year earlier. Feed grain use accounted for 81 percent of the concentrate total. About 5 million tons of oilseed meals were fed during the same period, or about .4 million less than during October-December 1980. Total concentrates fed in 1981/82 are forecast at 176 million tons, up from 165.7 million a year ago.

High-Protein Feeds

The current forecast of total high-protein feed (in terms of 44-percent protein content) consumption during 1981/82 is 22.8 million metric tons, up from 22.2 million a year earlier. For 1981/82, oilseed meal feeds will supply 83 percent, animal protein 12 percent, and grain byproducts 5 percent of the total amount available. These feed shares are nearly the same as a year ago.

Processed Feed Supplies

In actual tons (not reduced to 44 percent crude protein equivalent), oilseed meal feed consumption is estimated at 18.3 million metric tons, up 3 percent from a year ago. Soybean meal accounts for 88 percent of the total, about the same proportion as over the past 5 years. Soybean and cottonseed meal feeds are up, while linseed, peanut, and sunflower meal are down from a year ago.

Total consumption of animal protein feed is estimated at 2 million tons, down 22 percent from a year ago. The decrease occurred because these feeds are higher priced than readily available substitutes. Tankage and meat meal are forecast at 69 percent of the total, down from 76 percent in 1980/81. Tankage and meat meal, fish meal and solubles, and noncommercial milk-product feeds are below year-ago levels, while commercial dried milk products are up.

Total consumption of protein feed from grains is estimated at 2.1 million tons, up 36 percent from last year. Distillers' dried grains make up half of the total, up from 37 percent in 1980/81. Consumption of gluten feed and meal, brewers' dried grains, and distillers' dried grains have increased over last year's levels.

Other processed feeds consumption is estimated to total 11.2 million tons, down 2 percent from a year ago. Wheat millfeeds and molasses account for 36 and 23 percent, respectively. Thus, the total consumption of processed feeds in 1981/82 is estimated at 33.7 million tons, up from 33.3 million a year ago.

Hay Prospects

Total hay production in 1981 is estimated at 143 million short tons, up 9 percent from 1980, but 3 percent below the 1979 record. With an estimated May 1 carryover of 25.4 million tons, total 1981/82 supplies are forecast at 168.6 million, 3 percent above a year ago. This would provide about 1.81 tons of hay for each roughage-consuming animal unit (RCAU), unchanged from a year ago.

Production of alfalfa and alfalfa-hay mixtures for 1981 is estimated at 83.7 million tons, 5 percent above 1980, but 5 percent below the 1979 crop. The average yield from 26.4 million acres is projected at 3.17 tons, compared with 3.04 a year earlier and the record 3.19 in 1979.

In December, the average price for hay was $65.90 per ton, 14 percent below a year ago. The average price for May 1981 through January 1982 was $66.90, compared with $71.14 a year earlier.

Corn and Sorghum Silage and Forage

Corn acreage cut for silage in 1981 is estimated at 8.2 million acres, 11 percent less than in 1980, but 3 percent above 1979. The average yield per acre, at 14.1 tons, was up from 12 in 1980, but slightly below 1979's record 14.4. Production of silage, at 116 million tons, was 5 percent more than in 1980.

Production of sorghum silage, at 9.14 million tons, increased 31 percent from 1980 and 1 percent from 1979. Average yield was a record-high 12.11 tons per acre, 2.5 more than in 1980 and 0.3 above the previous high of 11.8 set in both 1972 and 1979. A total of 757,000 acres harvested for silage was up 3 percent from the previous year, but 1 percent below 1979.

Sorghum for forage was produced on 1.08 million acres, down 23 percent from last year and the lowest on record.

Pasture-Range Conditions

Pasture and range conditions averaged 82 percent of normal in 1981, compared with 60 percent a year earlier. This is 7 percentage points above the 1970-1980 average. The worst conditions occurred in the Southwest, 65 percent of normal; all other regions were above 75 percent.

Grain-Consuming Animal Units

Grain-consuming animal units (GCAU's) are estimated at about 77 million for 1981/82, 3 million less than last year. Units from cattle on feed and hogs, which are down 10 and 9 percent, respectively, lead the decline. Units from other beef cattle are up nearly 4 percent. Units from all poultry are expected to be about the same as last year, with broilers up 2 percent, layers plus replacements up 3 percent, and turkeys down 5 percent. Dairy cattle units may increase 1 percent from 1980/81, while heifer and calf units may decrease 1 percent. Horses and mule units are forecast up about 4 percent.

The total for concentrates fed during 1981/82 is estimated at 173 million metric tons—133 million will likely be grains. This compares with 166 and 126 million tons, respectively, a year ago. Thus, average total concentrates and grains fed per GCAU, at 2.24 and 1.72 tons per unit, respectively, are up from a year ago.

Roughage-Consuming Animal Units

Look for an increase in RCAU's during 1981/82, as the number of beef cattle increase because of the expansionary phase of the cycle. However, the proportion of cattle fed may decline because of poor feeding margins, and they may be on feed for shorter periods of time. But this is not reflected in the animal units. Units from beef cattle are expected to total 68 million for 1981/82, compared

with slightly more than 66 million a year ago. RCAU's from other beef cattle now make up slightly over 72 percent of the total 92 million units for 1981/82. RCAU's from cattle on feed are projected to total 1.7 million, down 10 percent from a year ago. Dairy cattle RCAU's will probably show a 1-percent gain from 1980/81—to nearly 15 million units. Horses and mules may show an increase of 4 percent, with nearly 3.5 million units.

Large supplies of corn and sorghum silage should reduce the rate of hay disappearance. Use for the hay marketing year would be 141 million tons based on 1.51 tons per RCAU, the 5-year average during the 1976-80 crop years.

High-Protein-Consuming Animal Units

High-protein-consuming animal units (HPAU's) are expected to total about 110.6 million during 1981/82, down from 113.9 million a year ago. The large reduction is attributed primarily to units from cattle on feed and hogs, down 10 and 9 percent, respectively. Units from all poultry are forecast to be about the same as last year, with broilers up 2 percent, layers and replacements up 3 percent, and turkeys down 5 percent.

WORLD COARSE GRAIN SITUATION

World Coarse Grain Crop to Increase

The estimate of world coarse grain production in 1981/82 is 770 million metric tons, an increase of about 6 percent over a year earlier. The rise is primarily due to increased production in the United States where the coarse grain crop is now estimated at 249 million tons, up 25 percent from 1980/81. Foreign production is estimated at 521 million tons, down about 1 percent from a year ago. Estimates of coarse grain production in Canada, Australia, and Thailand are substantially above last year. Less than favorable weather during planting in Argentina and South Africa is expected to hold production below the 1980/81 records for those countries. The Soviet Union had its third successive poor grain harvest.

Prospects for Higher World Carryover

World use is expected to be slightly above a year ago, but it still will probably fall well short of production, and the carryover may increase to around 108 million tons. Virtually all of the stock increase will occur in the United States. The stocks-to-use ratio is nearly 15 percent for 1981/82, up from 11 percent a year ago and the 12 percent averaged from 1977/78 to 1979/80.

World Coarse Grain Trade to Decline

Poor economic performance in many importing countries continues to depress global coarse grain trade. The forecast is now 103 million tons for July 1981 through June 1982, slightly below a year ago. The unsettled situation in Poland, uncertainty about Soviet coarse grain imports, credit problems in Eastern Europe, and the effects of the worldwide economic slowdown on livestock feeding could each have a significant impact on trade through the remainder of the marketing year.

Importing Countries

Soviet import projections have been lowered to 22 million tons because of reported bottlenecks at port and rail locations. Additionally, the recently announced U.S. sanctions in reaction to events in Poland raise some questions regarding the level of future Soviet imports from the United States.

Mexico's shipments continue to lag expectations. December import activity, normally the heaviest month for Mexican purchases, was lacking last year. For 1981/82, that country's coarse grain imports may total only 2.7 million tons, compared with 8.2 million in 1980/81.

The EC-10's coarse grain imports are forecast at 10 million tons, significantly below the 12.2 million imported a year ago. Declines are attributed to a favorable harvest and a reduction in livestock feeding. Coarse grain imports by other Western European countries are expected to reach 12.9 million tons, 4 million above 1980/81 due to the drought in Spain and Portugal. This reflects a significant decline in coarse grain production from a year ago. Eastern Europe's economic and political uncertainties have influenced coarse grain imports. For 1981/82, imports may total 8.6 million tons, down 2 million from a year ago.

Japanese coarse grain imports are expected to be 18.8 million tons, about the same as the past 2 years. This comes after a period of sustained growth.

Major coarse grain exporters and importers[1]

Item	Year beginning July		
	1979	1980[2]	1981[3]
	Million metric tons		
Major Exporters:			
U.S.	71.6	72.4	63.5
Argentina	6.6	9.9	14.1
Western Europe	5.5	7.3	5.1
Canada	4.8	4.6	6.3
South Africa	2.9	3.6	4.9
Australia	4.1	2.2	3.1
Thailand	2.3	2.2	2.6
Other	3.2	3.4	3.7
Total	101.0	105.6	103.3
Major Importers:			
Western Europe	23.2	21.0	22.9
Japan	18.9	18.9	18.8
Eastern Europe	11.4	10.6	8.6
USSR	18.4	16.0	22.0
China	2.0	0.9	0.8
Other	27.1	38.2	30.2
Total	101.0	105.6	103.3

[1]Coarse grains are corn, oats, sorghum, barley, rye, millet, and mixed grains. [2]Preliminary. [3]Estimated as of February 16, 1982.

Exporting Countries

Canadian coarse grain exports are expected to reach 6.3 million tons, 1.5 million above the 1979/80 record. The increased forecast is based primarily on continued-heavy barley movement, with shipments during August-December approximately 200,000 tons ahead of the all time high of 2 years ago. With abundant supplies, strong world demand for barley, and continued Soviet purchases, the Canadians are well on the way towards a banner export year.

Total coarse grain exports from Argentina are expected to reach 14.1 million tons, significantly above the 9.9 million of a year ago. However, the crop will be entering critical growth stages this month, and favorable weather will be needed to ensure the current production forecast of 18.6 million tons. Any changes in production may be reflected in the level of exports.

Thailand announced new barter arrangements with Romania and the Soviet Union—corn for fertilizer. These agreements make it increasingly likely that Thailand will be able to export at least 2.5 million tons of coarse grains.

During July-June, coarse grain exports from South Africa are expected to reach 4.9 million tons, because of the record crop last spring. Large supplies will enable countinued heavy shipments through the summer despite an expected 18-percent decline in production.

Major coarse grain producers[1]

Country	Year beginning October		
	1979	1980[2]	1981[3]
	Million metric tons		
U.S.	238.7	198.4	248.9
USSR	81.2	80.5	77.0
Western Europe	91.1	94.8	88.2
China	83.0	82.5	82.0
Eastern Europe	63.3	61.6	62.5
Canada	18.6	21.8	25.7
Argentina	10.6	21.1	18.6
South Africa	11.7	14.9	11.8
Australia	6.2	5.1	6.7
Thailand	3.6	3.5	4.2
Other	133.4	142.7	144.0
Total	741.4	726.9	769.6

[1]Coarse grains are corn, oats, sorghum, barley, rye, millet, and mixed grains. [2]Preliminary. [3]Estimated as of February 16, 1982.

FEED GRAIN OUTLOOK FOR 1982

Provisions of the 1982 Feed Grain Program

On January 29, Secretary of Agriculture John R. Block announced a voluntary 10-percent reduced-acreage program for 1982-crop feed grains. He also announced that these grains could be entered immediately at harvest into the farmer-owned reserve provided the market price is below the trigger price. Market prices are currently below trigger prices for all feed grains except oats. Only producers participating in the acreage reduction program will be eligible for program benefits such as target price protection and CCC commodity loans. A discussion of provisions of the 1981 Agriculture and Food Act, including acreage reduction programs, is in the last section.

Participating farmers must reduce their acreage planted to feed grains by at least 10 percent from the feed grain bases established for their farms. Two bases will be established: one for corn and sorghum, the second for barley and oats. Generally, the bases will be the higher of the 1981 planted acreage or the average of 1980 and 1981. However, for farms that have been following a definite rotation pattern, the bases will reflect such rotations.

The land removed from production and devoted to conservation uses must be eligible cropland protected from wind and water erosion. The land may not be mechanically harvested. However, farmers will be permitted to graze this acreage, except during the 6 principal growing months.

The 1982 target prices are: corn, $2.70 per bushel; sorghum, $2.60; barley, $2.60; and oats, $1.50. The national average loan rates for regular 9-month loans are: corn, $2.55; sorghum, $2.42; barley, $2.08; and oats, $1.31. The reserve loan rates, which are normally above the regular CCC loan rates but were raised even higher when the program was announced, are: corn, $2.90; sorghum, $2.75; barley, $2.37; and oats, $1.49. Market trigger levels at which farmers may take their grain out of the reserve without penalty are: corn, $3.25; sorghum, $3.10; barley, $2.65; and oats, $1.65.

Neither offsetting compliance nor cross compliance is a requirement under the program. For offsetting compliance, this means that farmers owning or operating more than one farm will not be required to participate on all farms to obtain program benefits on participating farms. For cross compliance, it means participation in programs for other crops is not required to qualify for the feed grain program benefits.

Prospective Plantings

Because the 1982 Feed Grain Program was not announced until late January, the February planting intentions report may not fully reflect farmers' intentions to participate in the program. However, many producers did expect an acreage reduction program, so some effects may be partially evident in the report. Nevertheless, the indicated planted acreage may be used as a starting point in developing estimates of 1982 plantings.

Corn

Based on a survey taken around February 1, producers indicated plans to seed 84.7 million acres of corn for all

purposes in 1982, 1 percent more than planted a year ago. The twelve North Central States, which account for 81 percent of the expected U.S. planted acreage, are showing a 2-percent increase from 1981 plantings. Illinois and North Dakota both expect 300,000 acre increases. Indiana may be up 250,000, Missouri by 200,000, and Michigan and Minnesota both may expand their planted acre by 150,000 acres. Iowa, the major producing State, expects a 100,000 acre decrease in planted area. In the Southern States, indicated plantings generally are down from a year ago. Moderate acreage increases are expected in the Western States.

Sorghum

Producers intend to plant 15.7 million acres of sorghum for all purposes in 1982, down 2 percent from 1981, but nearly the same as in 1980. Texas producers intend to plant 5 million acres, 4 percent more than last year. Texas acreage will account for 32 percent of the 1982 intended U.S. acreage. Kansas farmers expect to plant 4.2 million acres, a decrease of 2 percent from last year. Meanwhile, Nebraska acreage, at 2.1 million acres, is 9 percent less than 1981. These three States account for 72 percent of the Nation's intended sorghum acreage.

Barley

Producers intend to plant nearly 10 million acres of barley in 1982, a 3-percent increase from last year. North Dakota is the leading State with 2.5 million acres, up 11 percent. Minnesota, with 1.2 million acres, is up 10 percent. Montana and Idaho, at 1.5 and 1.1 million acres, respectively, both plan increases of 4 percent. Washington showed no change, but California and South Dakota indicated acreage reductions of 18 and 10 percent, respectively.

Oats

Producers plan to seed 14.7 million acres of oats in 1982, 8 percent more than last year. Prospective plantings in the major producing States are substantially higher than a year earlier because of strong oat prices. South Dakota, the leader at 2.6 million acres, expects an increase of 16 percent. Minnesota, at 1.7 million acres, anticipates a 6-percent increase. Texas, with 1.4 million acres, is the only major State showing a decline—7 percent less than in 1981.

Outlook for Program Participation

Incentive for Participation

Producer's incentives for participating in the feed grain program include the eligiblity for income support provided by the target price and price support that comes from the nonrecourse loan and purchase programs. Participating producers will also be eligible for the additional marketing alternatives and higher cash flow obtained through the producer-owned reserve. The costs of participation are the net income that is sacrificed by idling land and the expense putting the reduced acreage into conservation use.

Income Support

To evaluate their income support incentive, farmers must estimate the deficiency payment rate. The maximum deficiency payment rates available to a program participant are 15, 18, 52, and 19 cents per bushel for corn, sorghum, barley, and oats, respectively. The maximum rate would be paid only if the average price received by farmers over the first 5 months of the marketing year is less than or equal to the regular national average loan rate. Whether this occurs depends upon the extent to which farmers continue to hold grain and use the farmer-owned reserve program, 1982-crop prospects, and general economic conditions.

The participation decision should involve budgeting analysis of the various alternatives, considering all possible revenues and costs. An aggregate approximation can be made by using national average costs and yields and assuming different farm price and deficiency payment combinations. Even when the maximum deficiency payment for corn is assumed, the payment—by itself—does not appear to be sufficient to attract widespread participation based on the experience of previous programs. The same is true for sorghum. Current farm prices for oats and barley in relation to their target prices suggest weaker participation incentives for those crops.

Price Support

Another incentive for participation relates to the marketing alternatives that come from being a participant. The regular loans and reserve loans for barley and oats are below current farm prices and therefore, provide little incentive—aside from risk aversion—for farmers of these crops to participate. Thus, significant changes in oats and barley acreages from those reported in the planting intentions report are unlikely.

Market prices for corn and sorghum have not been as favorable as those for barley and especially oats. While the regular 1982 loan rates for corn and sorghum may offer no clear advantage over market prices, the reserve loan rates are substantially higher. This is further augmented by the prepaid storage payments of 26.5 cents per bushel for corn, sorghum, and barley, and 20 cents for oats. For example, a bushel of corn entered into the reserve would provide an immediate cash flow of $3.165—$2.90 + $0.265. This is 61.5 cents above the regular loan for 1982/83 and about 75 cents a bushel above the current national average farm price. The reserve may provide substantial incentive for participation in corn and sorghum acreage reduction programs, especially for producers with on-farm storage space. Therefore, it is likely that planted acreage for corn and sorghum may be below that reported as intentions.

THE NEW AGRICULTURE AND FOOD ACT

The Agriculture and Food Act of 1981 (PL 97-98) was signed into law on December 22, 1981. The Act provides a framework for the Secretary of Agriculture to administer various agricultural and food programs for the next 4 years. The new act sets minimum levels and requirements for certain programs but gives the Secretary more discretionary authority in implementing many of the provisions than the 1977 Act did.

Target Price and Loan and Purchase Program

The target price and loan and purchase programs are continued through the 1985 crop year. Income support is provided through target prices, which guarantee eligible producers a direct payment if farm prices fall below established target prices during the first 5 months of the marketing year. The nonrecourse loan and purchase program continues to provide price support.

Target prices for the 1982-85 corn crops are to be not less than $2.70, $2.86, $3.03, and $3.18 per bushel, respectively. However, the Secretary has discretion to establish higher levels based on changes in per acre costs of production. Target prices for sorghum, oats, and if designated by the Secretary, barley must be set at levels that the Secretary determines fair and reasonable in relation to target prices for corn.

The nonrecourse loan and purchase program will continue to be available to eligible feed grain producers. The minimum loan rate for the 1982-85 corn crops is set at $2.55 per bushel. Loan rates for sorghum, barley, and oats will be set at levels fair and reasonable in relation to that for corn.

If the average market price for corn is not more than 105 percent of the loan rate in any marketing year, the Secretary may reduce the loan and purchase level for the next marketing year, but by no more than 10 percent in any year, and not lower than $2. If this action is taken, emergency compensation must be made by increasing the target price payments for the affected crop by an amount that will provide the same total return to producers as if the change in the loan and purchase rate had not been made. If there are no target price payments in effect, then separate payments must be made. Payment limitations will not apply to the emergency compensation.

Program Definitions

The national program acreage (NPA) for feed grains is the number of harvested acres the Secretary determines (based on weighted national average program yields) is required to meet estimated domestic and export needs (less imports) plus any desired increase or decrease in carryover. The NPA for feed grains must be announced by November 15 of the preceding calendar year. Based on the most recent information, the NPA may be adjusted at a later time, for purposes of calculating the program allocation factor.

The program allocation factor is limited to between 80 and 100 percent. The exact percentage will be determined by dividing the NPA by the number of acres that the Secretary estimates will be harvested in the current year. The allocation factor may be applied as an adjustment factor that will reduce payments on farms that have exceeded specified acreage maximums. The allocation factor will be used to determine the farm program acreage on those farms by multiplying the factor by the number of acres planted for harvest. If an acreage reduction program is in effect, program acreage will be the area planted for harvest within the permitted acreage base—the allocation factor and NPA are not used.

The farm program payment yield for each feed grain will once again be the one established for each farm for the previous crop year, adjusted by the Secretary to provide a fair and equitable yield. The proven yield provision is continued. This allows farmers to prove a higher yield for payment purposes.

Deficiency payments will be made to eligible producers of each feed grain if the national weighted-average market price received by farmers during the first 5 months of the marketing year is below the established target price. The payment rate is the difference between the target price and the higher of the national weighted-average market price or the loan rate. Payments will again be determined by multiplying the payment rate in each year times the farm program acreage times the farm program payment yield.

Producers will receive required deficiency payments on 100 percent of their acreage planted for harvest if they voluntarily reduce this acreage in line with the percentage established by the Secretary when the NPA for feed grains is announced. Other program requirements would have to be met to qualify for benefits.

Acreage Reduction Programs

Provisions to control acreage have been modified. The announcement for either an acreage reduction program or a set-aside program for feed grains must be made by November 15.

Under an acreage reduction program, the maximum that may be planted is determined by applying a uniform percentage reduction to each farm's feed grain acreage base. The acreage base is based on the area that was planted for harvest (adjusted to be fair and equitable) for the preceding year or an average of the 2 preceding years, generally whichever is larger.

Under a set-aside program, plantings are controlled by requiring that a percentage of acreage planted for harvest in that year be idled. Program adjustments may be made to account for abnormal factors affecting production. The Secretary may limit the acreage planted to feed grains under a set-aside program. The Secreatary may also require that the sum of idled and planted land not exceed the farm's normal crop acreage (NCA). Because set-aside is stated in terms of current year

plantings, even with program compliance, plantings of a program crop could increase over the previous year if the farmer chooses to reduce some other crop acreage. This kind of adjustment would not be possible under an acreage limitation program, because the crop acreage base is determined from previous years' planted acreage. Thus, an acreage limitation program provides more specific control of acreage than set-aside programs.

The Secretary may also offer producers a paid diversion program if such payments will assist in obtaining necessary adjustments in total acreage. This may be offered whether an acreage limitation or set-aside program is in effect.

Cross compliance with program provisions for other commodities and offsetting compliance for operators of more than one farm may be required as a condition of eligiblity for program benefits if a set-aside is in effect, but not if an acreage limitation program is established.

Producer-Held Storage

The 1981 Act requires the Secretary to formulate and administer a producer-held storage program for feed grains. The reserve program is to be accomplished through an original or extended price support loan of 3 to 5 years. The rate for reserve loans may be determined by the Secretary but cannot be less than the regular loan rate. The Secretary may provide storage payments to encourage participation and may waive or adjust interest charges on reserve loans. An upper limit may be put on the amount of feed grains placed in the reserve, but the limit may not be less than 1 billion bushels.

Whenever it is determined that the market price for the commodity has attained a specific level (trigger price), the Secretary is authorized to increase the rate of interest on loans that have been made and design other methods to encourage the orderly release of feed grains into the market place. The Secretary has full discretion in determining trigger (or release) prices.

Producers redeeming loans before market prices reach the announced release level will be subject to a penalty. The Secretary may recover storage payments and assess penalty interest or other charges.

The rate of interest charged participants in the program is not to be less than the rate of interest charged the Commodity Credit Corporation (CCC) by the U.S. Treasury. However, the Secretary may waive or adjust such interest whenever necessary.

Whenever the reserve loan program is in effect, the CCC cannot sell any of its feed grain stocks at less than 110 percent of the trigger price. This restriction will not apply to sales of corn used for gasohol production, commodities which have substantially deteriorated, or to sales or disposals from the emergency feed program or disaster reserve.

Disaster Payments

Beginning with the 1982 crop, producers will not be entitled to disaster payments if crop insurance is available under the Federal Crop Insurance Act. An exception may be made if the loss created by the disaster (low yields or prevented plantings) cannot be alleviated by the insurance payment or other Federal assistance.

Export and Embargo Protection

The Secretary must compensate farmers whose products are affected by any future "selective" embargo (one that does not cover all U.S. exports to the affected country) on shipments of agricultural products. The protection would be required if the embargoed country purchases more than 3 percent of total U.S. exports of the affected commodity. Compensation of farmers would be provided by (1) direct payments covering the gap between post-embargo market prices and 100 percent of parity, and/or (2) an increase in the price support loan rate to 100 percent of parity for the affected commodity.

Payment Limitations

Through the 1985 crops, payment limitations will continue at $50,000 per person per year for all except disaster payments. The disaster payment limit will continue at $100,000 per person per year. Payment limits do not include loans or purchases.

FEEDING OF HIGH-ENERGY CONCENTRATES

by

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ABSTRACT: Since 1971, high-energy feeds have consistently accounted for around 80 percent of total concentrates fed. Corn increased its share of high-energy feeds from 70 percent in 1971 to 80 percent in 1979. Hogs are the major consumers of high-energy feeds, accounting for over 30 percent of the total. Beef and dairy cattle are fed around 45 percent, with cattle on feed and milk cows the predominant consumers. Poultry consumes around 20 percent, with hens, pullets, and broilers accounting for most of that total. Feeding rates range from 5 pounds per broiler to over 4,400 pounds per milk cow per year.

KEYWORDS: High-energy feeds, concentrates, energy requirements in feed, feeding rates.

Nutritional Requirements of Livestock and Poultry

A balanced livestock or poultry ration must include sufficient protein, carbohydrates, and fats. Protein is needed for growth and replacement of body tissue, as well as for production of milk and eggs. Carbohydrates and fats provide the energy necessary to carry out these activities and to maintain body functions. Fats contain more energy per pound than carbohydrates; however, because carbohydrates are more abundant and cheaper, fats usually make up only a small portion of the feed ration.

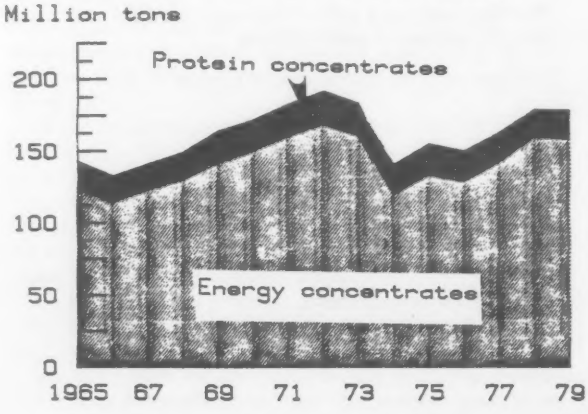
Feeds can be divided into 3 categories: (1) concentrates, (2) roughages, and (3) supplements. Concentrate feeds, such as grains and oilseed meals, are high in total digestible nutrients (TDN) and low in fiber. High levels of TDN allow animals to grow or produce at a faster rate on less feed. Since poultry, swine, and most other nonruminants (non-cud chewing, single-stomach animals) cannot use high-fiber feeds efficiently, the bulk of their rations consists of low-fiber concentrate feeds.

Roughages, such as pasture and hay, supply much of the energy needs of ruminants and horses. In fact, some roughage is necessary to prevent digestive upsets. However, to increase production or to adjust for stress, roughages are often replaced by concentrate feeds, which are higher in TDN. For example, some finishing rations for beef cattle contain more than 85 percent concentrate feeds. Also, range cattle are often fed concentrates during the winter months and other periods when pasture feed is short.

High-energy concentrates are feeds that contain a large percentage of carbohydrates or fats and a low percentage of protein, generally less than 20 percent. Ingredients that contain more than 20 percent of their total weight as crude (total) protein are generally classified as protein concentrates. Figure 1 shows the annual quantity of protein and energy concentrates fed to U.S. livestock and poultry from 1965 to 1979. Energy concentrates generally make up 80 percent of the total ration for all livestock and poultry, with protein concentrates around 13 percent.[1]

Corn is the main energy concentrate, and soybean meal the main protein ingredient (figures 2 and 3). Other energy-feed concentrates include sorghum, oats, barley, wheat, and their milling byproducts. Other protein concentrates besides soybean meal include cottonseed meal, other oilseed meals, animal protein (such as fish meal and edible tankage), and grain byproducts (such as gluten feeds and brewers grains).

Figure 1



[1]The total concentrate ration includes other feeds in addition to protein and energy concentrates. However, the group consisting of other feeds makes up only about 7 percent of the total ration.

Figure 2 Energy Concentrates Fed to U. S. Livestock

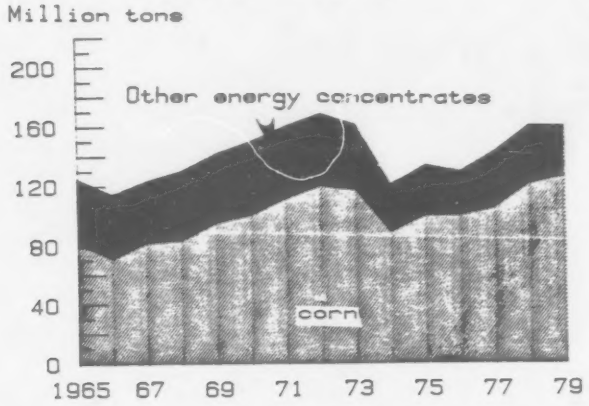
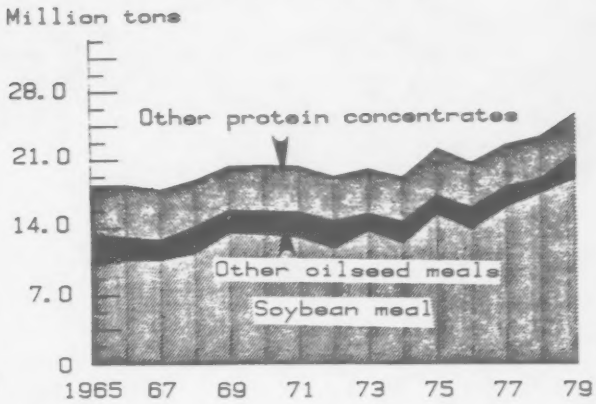


Figure 3 Protein Concentrates Fed to U. S. Livestock



Protein is extremely important in livestock rations, especially for young animals and those in high production. It is desirable to provide enough protein for the animal to grow or produce, but to avoid added expense by feeding more than is needed. (See special article on High-Protein Feeding in the February 1982 *Fats and Oils Outlook and Situation* FOS-306.)

More energy feed is required than protein or any other nutrient. If sufficient amounts are not ingested, the energy needs of the body are met by the breakdown of body tissue. Substantial quantities of energy are required for animals in production. For example, a lactating cow may use as much as 48 percent of the feed it consumes for milk production.

High-Energy Concentrates

Grains are usually the cheapest and most abundant source of energy. About 83 percent of the dry matter of most grains (corn, sorghum, barley, and wheat) consists of carbohydrates. In oats, this figure is roughly 79 percent. Of all the grains, corn has the highest energy value. However, price and availability, along with nutrient composition, help determine which grains are used and at what level. Corn and sorghum are currently the primary grains fed to livestock, accounting for almost 90 percent of all high-energy feeds consumed. Corn alone makes up almost 80 percent of the total.

High-protein feeds can be used to provide energy, but the substitution value diminishes as the proportion of high-protein feed increases. For example, a pound of soybean meal may replace 5 or 6 pounds of corn when the feed contains only a small proportion of soybean meal, but soymeal may replace less than a pound of corn if the meal already makes up a large proportion of the ration.

High-Energy Feed Consumption

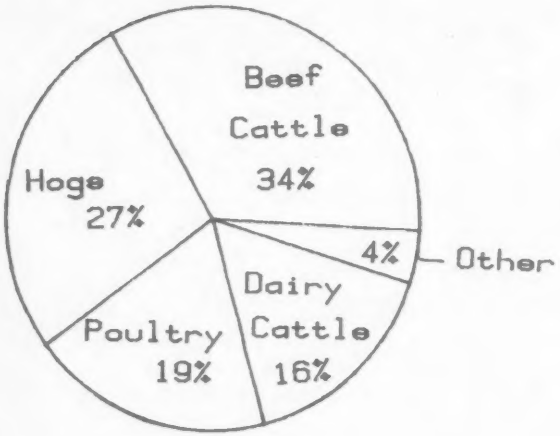
Since 1971, high-energy feeds have consistently accounted for around 80 percent of the total concentrate feeds consumed. However, corn has increased its share of the high-energy market from 70 percent in 1971 to 80 percent in 1979. While the total amount of corn fed was increasing from around 112 million tons in 1971 to over 126 million in 1979, all other energy feeds combined were declining from 49 to 32 million tons. Corn has dominated the high-energy feed market, primarily because of its wide availability, high quality, and low relative cost.

As figure 4 illustrates, hogs displaced beef cattle as the major consumers of high-energy feeds during the seventies. Hogs now account for over 30 percent of the total. Beef cattle are fed 28 percent of high-energy feeds, with cattle on feed making up 78 percent of that figure. Of the 20 percent fed to poultry, hens and pullets account for 10 percent, broilers 7 percent, and turkeys and replacement layers combined 3 percent. Dairy cattle are fed 17 percent of all high-energy feeds, with milk cows consuming 88 percent of that amount.

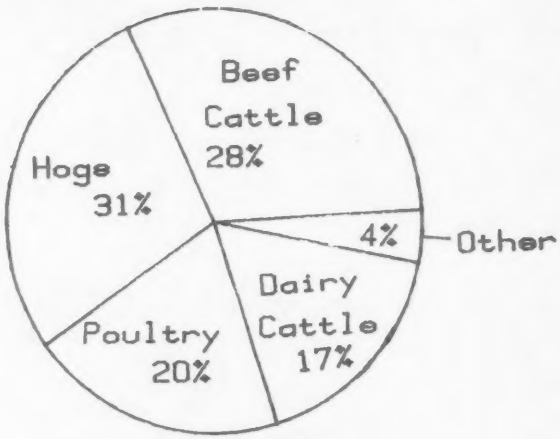
The remaining sections will focus on changes in high-energy feed consumption and feeding rates by the various livestock classes between 1971 and 1979. Energy feed data used in this article are the Economic Research Service's estimates published each fall in the *Feed Outlook and Situation*. The number of animals fed during the feeding year (October-September) were derived from numbers printed in various Statistical Reporting Service reports. Animal numbers during the feeding year have been previously reported in USDA Statistical Bulletins 336, 446, 530, and their supplements. Feeding rates were obtained by dividing the amount of high-energy feed or corn fed to each class of livestock by the number of animals in that class.

All consumption figures and feeding rates are measured in feed units. A feed unit is the amount of feed estimated to have the same feeding value as 1 pound of corn. The value varies with the kind of livestock fed. For example, sorghum may have 100 percent of the feeding value of corn when fed to milk cows, but only 90 percent of the value when fed to hogs. The following table lists the substitution values by feed and livestock class.

Figure 4
High-Energy Feed Consumed by Livestock Class



1969-71



1977-79

Feeding Values

Livestock Class	Corn	Sorghum	Barley	Oats	Wheat	Millfeeds
			Percent			
Hogs	100	90	90	103	105	
Cattle on Feed	100	92	88	85	105	35
Milk Cows	100	100	100	90	105	72
Poultry	100	95	80	90	105	80

High-Energy Feeding by Livestock Class

Hogs

Hogs consumed almost 52 million tons of high-energy feed in 1979. Corn made up 92 percent of the energy feeding ratio in 1979, compared with 88 percent in 1971.

Crop year (Oct-Sept)	Hogs	Total corn fed	Total high-energy feeds fed
	million animals	*10,000 tons*	
1971	94.3	3,542	4,025
1975	76.7	3,241	3,574
1979	104.0	4,780	5,188

Annual feeding rates have fluctuated between 1971 and 1979. Rates tend to change during the course of the hog cycle as the proportion of market hogs to breeding herd changes. In an expansionary phase, such as existed in the late seventies, rates are likely to increase. Feeding rates may also vary in response to changes in the price of feed relative to hog prices.

Cattle on Feed

Cattle feed rations decreased from about 3,440 pounds of high-energy feed per head in 1971 to 2,533 in 1975. The decline in feeding rates and animal numbers reflected the unfavorable beef-steer/feed price ratios of the mid-seventies. Cattle were brought into feed lots at heavier weights, thus requiring less grain to bring them to market weight.

Corn as a percent of total high-energy feeds consumed by cattle on feed increased from about 67 percent in 1971 to 75 percent in 1979. Sorghum consumption remained around 20 percent, while barley and wheat declined.

Crop year (Oct-Sept)	Cattle on Feed	Total corn fed	Total high-energy feeds fed
	million animals	*10,000 tons*	
1975	25.8	2,370	3,268
1979	24.6	2,345	3,137

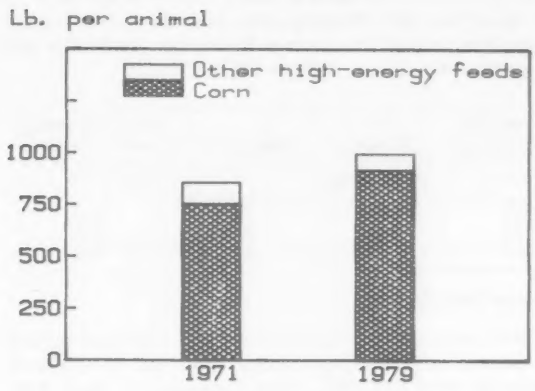
Milk Cows

Even though animal numbers decreased slightly, consumption of high-energy feeds increased between 1971 and 1979. Feeding rates jumped from 3,800 pounds of high-energy feed per animal in 1971 to over 4,400 in 1979. Most of this change occurred after 1975—a time of favorable milk/feed price ratios. Milk producers found it more efficient to increase output per cow and reduce total cow numbers.

In 1971, corn accounted for 67 percent of the high-energy feeds fed to milk cows. By 1979, corn made up

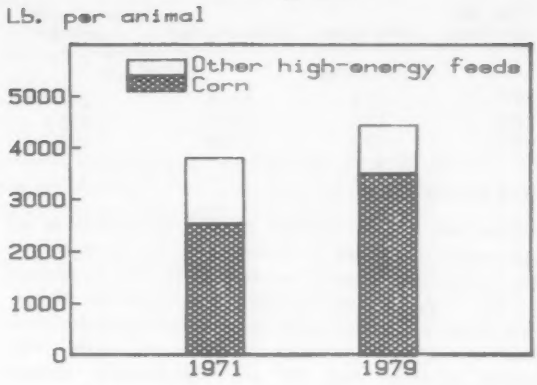
Hogs

Feeding Rates



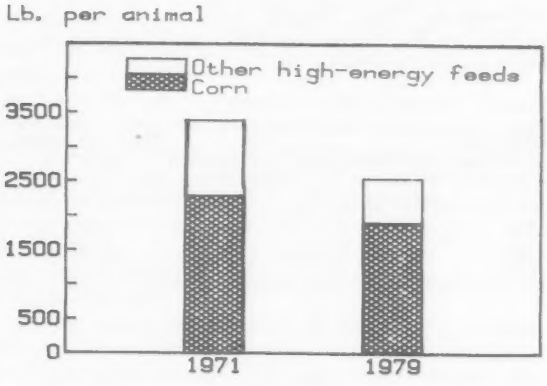
Milk Cows

Feeding Rates



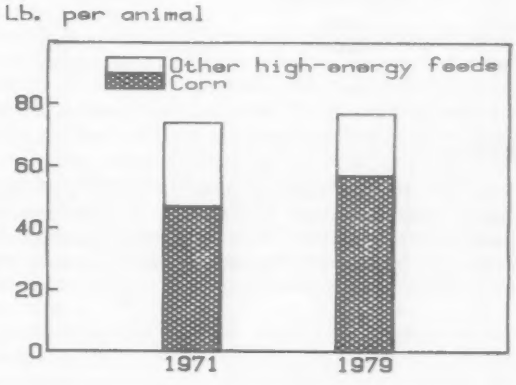
Cattle on Feed

Feeding Rates



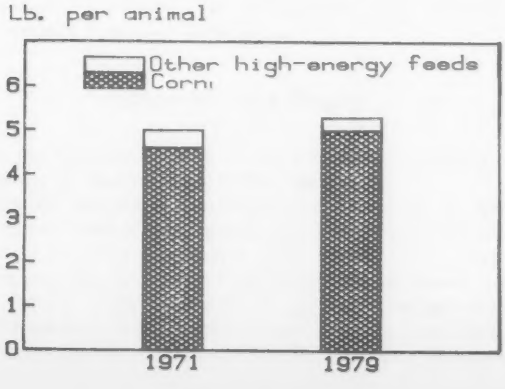
Hens and Pullets

Feeding Rates



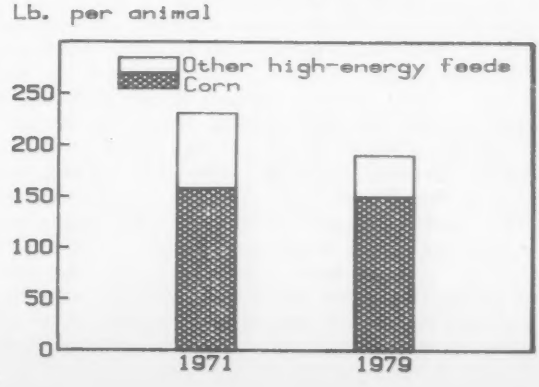
Broilers

Feeding Rates



Other Beef

Feeding Rates



close to 80 percent of the total. Oat and barley consumption decreased during this period.

Crop year (Oct-Sept)	Milk Cows	Total corn fed	Total high-energy feeds fed
	million animals	*10,000 tons*	
1971	11.8	1,498	2,242
1975	11.1	1,596	2,136
1979	10.8	1,896	2,397

Hens and Pullets

Hens and pullets consume around 10 percent of all high-energy feeds fed to livestock. Corn increased its share of the total from 64 percent in 1971 to 74 percent in 1979. Sorghum consumption remained around 10 percent, while use of all other high-energy feeds declined. Total consumption of high-energy feeds varied with animal numbers but did not significantly change between 1971 and 1979. Corn feeding rates, however, increased from 47 pounds per chicken in 1971 to 57 in 1979.

Crop year (Oct-Sept)	Hens and Pullets	Total corn fed	Total high-energy feeds fed
	million animals	*10,000 tons*	
1971	3,073	703	772
1975	3,285	636	666
1979	4,108	1,027	1,092

Broilers

In 1979, broilers were fed about 7 percent of all high-energy feeds consumed by livestock, a slight increase from 5 percent in 1971. Corn consistently made up over 90 percent of the total. Broiler numbers increased from around 3 billion in 1971 to over 4 billion in 1979, thus boosting total consumption of high-energy feeds by over 40 percent. Feeding rates varied from around 5 pounds per broiler in 1971, down to about 4 in 1975, and back up to over 5 in 1979. Feeding rates went down at a time of high corn prices. The average live-weight per broiler was lower in 1975 than in 1971 or 1979.

Crop year (Oct-Sept)	Broilers	Total corn fed	Total high-energy feeds fed
	million animals	*10,000 tons*	
1971	75.7	599	875
1975	100.0	671	903
1979	83.7	626	796

Other Beef Cattle

Beef cattle other than cattle on feed consumed around 6 percent of total high-energy feeds fed to livestock between 1971 and 1979. Corn increased its share from 68 percent in 1971 to 79 percent in 1979. Sorghum made up 11 percent of the high-energy ration in 1979, down from 13 percent in 1971. Total consumption of high-energy feeds increased along with animal numbers in 1975, but feeding rates fell off. By 1979, animal numbers had declined, and feeding rates showed some improvement. Corn feeding rates, however, nearly matched the 1971 figure, while total high-energy feeding rates were still well below 1971.

Crop year (Oct-Sept)	Other Beef Cattle	Total corn fed	Total high-energy feeds fed
	million animals	*10,000 tons*	
1971	414	983	1,538
1975	361	889	1,522
1979	395	1,121	1,522

CORN MARKETING PATTERNS IN THE UNITED STATES

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ABSTRACT: The marketing of U.S. corn involves complex interregional movements. This article presents an overview of a survey of corn marketing channels during 1977. More recent developments on marketing patterns are discussed, and the survey results are contrasted with 1979 data.

KEYWORDS: Corn, corn marketing, grain transportation, grain movements.

Introduction

Marketing corn in the United States tends to be complex, involving many interregional movements. Moving corn from the areas of concentrated production to processing and export locations requires a large transportation capacity and alternative transportation modes. Information about the transportation requirements and the origin and destination of the corn marketed is important for many policy and investment decisions. Recognition of the need for better information in this area led to a recent survey of grain-marketing firms throughout the United States. This article presents some of the findings. More detailed data about corn movements can be found in reference 1.

A large volume of corn must be transported, because production is highly concentrated and exports are channeled primarily through one major export region, the Gulf Coast. The production of corn is concentrated in the nine States that produced almost 5.3 billion bushels of the 6.5 billion U.S. total for 1977. Of these, the Corn Belt States (Illinois, Indiana, Iowa, Missouri, and Ohio) produced 3.5 billion bushels or 54 percent of the U.S. total. The Lakes States (Michigan, Minnesota, and Wisconsin) produced over 17 percent, and Nebraska accounted for another 10 percent.

Shipments by Region

Grain marketing firms in the United States reported shipping an estimated 5.1 billion bushels of corn in 1977 (table 1), excluding 1.6 billion sent overseas by port elevators. Part of the reported shipments were the same corn transported by several firms at different points along the way and counted each time. For example, over 17 million bushels of corn shipped to Chicago were reshipped to other domestic or port regions. In Illinois, over two-thirds of the corn handled by river elevators was shipped to them by country elevators, with the balance coming directly from nearby farms. The same general pattern existed in other States that shipped large volumes by barge.

Intrastate shipments accounted for 2.37 billion bushels or 46.5 percent of total shipments. Illinois and Iowa made up 47 percent. Minnesota and Nebraska each had intrastate movements in excess of 200 million bushels. About one-half of these intrastate movements are shipments from country elevators to river and terminal elevators. The corn is then reshipped to interstate or port destinations. The volume of corn marketed from U.S. farms averaged about 4 billion bushels during 1976 and 1977. Therefore, about 25 percent of the total volume transported to all destinations was shipped more than once.

Trucks were the primary mode for intrastate trade, accounting for about 88 percent of the total (75 percent by commercial truckers and 13 percent by trucks originating on the farm). Only 11 percent of intrastate movements went by rail.

Marketing firms shipped over 1 billion bushels to interstate domestic points in 1977 (table 1). An additional 1.7 billion went to various export regions, and about 93 percent of the 1.7 billion moved in interstate commerce. So, interstate shipments totaled 2.6 billion bushels, with 49 percent hauled by rail. Barges hauled about 35 percent of the total, and interstate truck movements accounted for only 16 percent.

Almost all States shipped some corn to interstate domestic markets, but the origins tended to be highly concentrated. The Corn Belt and Northern Plains regions accounted for 845 million bushels or 83 percent of the total (table 1). Nebraska led all States with 221 million bushels. Corn movements to export regions were even more concentrated than domestic ones—the Corn Belt alone originated 1.38 billion bushels, 80 percent of the total. Illinois firms shipped 653 million bushels—almost half the Corn Belt total—mostly by barge. Iowa

and Minnesota also had large barge movements to ports. Indiana and Ohio port shipments moved predominantly in trainload units.

The movements to port destinations are shown in table 2. Movements to all export regions totaled 1.74 billion bushels in 1977, including 29 million that moved directly from farms to port elevators. Ports located in the Gulf received 1.1 billion bushels or 64 percent of the total. Major origins of the Gulf shipments were Illinois, Iowa, and Minnesota—totaling 84 percent of movements to Gulf ports. Atlantic ports received 22 percent of the total, primarily from Indiana and Ohio. Great Lakes ports drew corn from several States in the Corn Belt and Lake States. Only 27 million bushels moved to Pacific ports in 1977, primarily from Nebraska.

Receipts by Region and Mode Of Transport

Unlike their origins, the destinations of domestic movements were widely dispersed. Almost 1.1 billion bushels were received by marketing firms in 45 States. Interstate shipments were made to all States except Montana, Nevada, and Rhode Island. The Corn Belt led all regions with receipts totaling 230 million bushels (table 3). The major broiler-producing regions (Southwest and Delta States) were also important domestic markets, totaling 393 million bushels in 1977, mostly from the Corn Belt. California and Colorado dominated in the West, receiving 85.5 and 38.7 million bushels, respectively. Shipments there moved mostly by rail, with Nebraska as the major supplier.

Rail was the dominant mode in 31 receiving States hauling 60 percent of the total interstate volume moving to domestic destinations. Only 3.4 percent of the total was shipped by barge, mostly to Alabama, which received over 28 million bushels by this transporation mode. Truck shipments, accounting for about 28 percent of total volume, were usually between adjoining States.

In contrast with the importance of rail in domestic movements, barges primarily moved corn to ports, accounting for 50 percent of the 1.7 billion bushels received at ports in 1977 (table 4). Port elevators along the Mississippi River in Louisiana received 1.4 billion bushels, with barges hauling over 85 percent. Rail was the predominant mode for corn moving to Atlantic ports, accounting for 88 percent of all corn going to these ports. A sizable proportion of those receipts was shipped by rail from the eastern Corn Belt in trainload units.

Ports along the Great Lakes were supplied primarily by trucks originating in adjacent States. Most corn moved by rail to Duluth-Superior ports, but the volume was small. About 25 percent of Chicago receipts came by rail, and Iowa was the major origin. Movements directly from farms to port elevators were common in California, accounting for one-third of the total. Receipts directly from farms totaled about 9 million bushels in the Chicago and Toledo port areas.

Developments in Recent Years

Substantial changes have occurred in corn marketing patterns since 1977. Between 1976 and 1981, production of corn rose from 6.3 billion to 8.2 billion bushels with the Corn Belt accounting for about 55 percent of the total during period. The Lake States made up about 15 percent during the same period. Output in those 3 States jumped substantially in 1977 and was maintained after that. Production in the Northern Plains increased rapidly and, by 1979, ranked second.

Corn production in the Delta States and Southeast regions has been below 1977 levels, while broiler production is about 30 percent above 1976/77. As a result, movements from the Corn Belt to these regions have probably increased sharply since the 1977 survey. The quantity of corn fed by the dairy and swine industries has also increased substantially, causing higher use where these industries are located. Overall, domestic use rose by about a fifth since 1977.

Changes in exports and the shares handled by various ports have had the greatest impact on transportation patterns since 1977. The most notable change is at Pacific ports, where export inspections increased from 15 million bushels in 1977 to 366 million in 1980. Although California ports draw some corn from nearby, most is received by rail from distant points. The rise in exports through Pacific ports corresponds to increases in production that have occurred in the Northern Plains. Consequently, a substantial increase in movement from the Northern Plains to the Pacific ports has occurred since 1977. The trend of increasing exports from Pacific ports is expected to remain subject to changes in the relative cost of moving corn from production points to foreign destinations through alternative port locations. Pacific ports currently serve foreign destinations in Southeast Asia, a rapidly growing market that was previously supplied from Gulf ports.

Great Lakes ports are highly dependent on corn that is trucked from adjacent States. The volume shipped from Chicago-Milwaukee expanded rapidly between 1977 and 1979. In 1980, the volume handled at Toledo continued to increase, while the Chicago-Milwaukee total declined. This change reflected the impact of the drought in Illinois and Indiana and good crops in Michigan and Ohio that year. The Atlantic ports compete with Toledo for shipments originating in Indiana, Michigan, and Ohio.

The Gulf continues to dominate corn exports, with inspections totaling 1.5 billion bushels in 1980, up from 1.1 billion in 1977. Even though that increase was the largest of any region, the share of total exports fell from 67 percent in 1977 to 59 percent in 1980. This decline reflected the congestion and capacity limitations at the Gulf and the more favorable ocean freight rates from Pacific ports to Southeast Asia. However, the Gulf ports continue to enjoy an advantage in domestic transportation rates because of available barges from corn-producing States. Barge shipments increased 25 percent between 1977 and 1980 (reference 2).

CONCLUSIONS

The seventies was a dynamic period for corn marketing. Production expanded rapidly in response to the growing market for U.S. corn. The stepped-up export activity has altered domestic movement patterns and has placed very large demands on the industries that handle and transport bulk commodities in the United States. Although the grain handling capacities at U.S. ports have also been severely tested at times, the marketing system has adequately responded to these needs. The volume of corn currently handled would have been considered an impossible task only a few years ago.

Table 1—U.S. shipments of corn to domestic destinations and export regions, 1977[1]

Origin[2]	Domestic		Export regions	Total
	Intrastate	Interstate		
	1,000 bushels			
Northeast	51,168	18,406	13,691	83,265
Appalachian	80,290	42,110	70,897	193,297
Southwest	67,039	13,118	9,200	89,357
Lakes States	275,099	66,173	180,544	521,816
Corn Belt	1,416,320	583,155	1,376,097	3,375,572
Delta States	28,330	1,638	396	30,364
Northern Plains	289,764	261,874	44,560	596,198
Southern Plains	129,682	12,381	3,888	145,951
Mountain	10,322	9,634	0	19,956
Pacific	20,861	0	429	21,290
Great Lakes Ports	570	1,708	14,904	17,182
Atlantic Ports	779	2,789	95	3,663
Gulf Ports	1,764	786	0	2,550
Total	2,371,988	1,013,772	1,714,701	5,100,461

[1]These data exclude export elevator shipments to foreign destinations by water. [2]Regions are standard federal regions. States included in each are: Northeast (Del., Md., N.J., N.Y., Penn., and N. Eng. States); Appalachian (Ky., N.C, Tenn., Va., and W. Va.); Southeast (Ala., Fla., Ga., and S.C.); Lakes States (Mich., Minn., and Wisc.); Corn Belt (Ill., Ind., Ia., Mo., and Oh.); Delta States (Ark., La., and Miss.); Northern Plains (Kan., Neb., N.D., and S.D.); Southern Plains (Okla. and Tex.); Mountain (Ariz., Col., Ida., Mont., New., N.M., Utah, and Wyo.); Pacific (Calif., Oreg., and Wash.).

Table 2—Movements of corn to various export regions, 1977[1]

Origin	Great Lakes	Atlantic Coast	Gulf Coast	Pacific Coast	Total
	1,000 bushels				
Northeast	0	15,640	0	0	15,640
Appalachian	0	25,520	49,000	0	74,520
Southeast	0	5,214	4,731	0	9,945
Lakes States	69,733	19,835	104,452	0	194,020
Corn Belt	142,271	314,294	919,377	4,388	1,380,330
Delta States	0	0	396	0	396
Northern Plains	975	0	26,262	17,323	44,560
Southern Plains	0	0	3,888	0	3,888
Mountain	0	0	0	0	0
Pacific	0	0	0	5,704	5,704
Great Lakes Ports	4,392	2,202	8,310	0	14,904
Atlantic Ports	0	95	0	0	95
Total	217,271	382,800	1,116,416	27,415	1,744,002

[1]These data include movements—excluded from table 1—to port elevators directly from farms. See footnote 2, table 1 for list of States in each region.

References

(1) Hill, Lowell D., Mack N. Leath, and Steven W. Fuller. *Corn Movements in the United States—Interregional Flow Patterns and Transportation Requirements in 1977*, Univ. of Illinois at Urbana-Champaign, No. Cent. Reg. Res. Bul. 275, So. Coop. Ser. Bul. 253, Ill. Bul. 768, Jan. 1981.

(2) U.S. Department of Agriculture. *Grain Market News: Weekly Summary and Statistics*, Agri. Mkt. Ser., selected issues.

Table 4—U.S. receipts of corn at port areas and transportation modes, 1977

Export region and port area	Quantity received	Modal share			
		Rail	Truck	Barge	Farm truck
	1,000 bushels	*Percent*			
Great Lakes					
Duluth-Superior	6,186	87.7	12.3	0	0
Chicago area	118,851	24.8	64.5	3.5	7.2
Toledo area	84,793	.2	89.0	0	10.8
Saginaw	3,595	.5	99.5	0	0
Subtotal	213,425	16.4	73.3	2.0	8.3
Atlantic					
North Atlantic	53,450	89.8	10.2	0	0
South Atlantic	329,350	87.9	8.6	1.6	1.9
Subtotal	382,800	88.1	8.9	1.4	1.6
Gulf					
East Gulf	20,984	55.8	10.0	33.7	.5
Mississippi River	1,004,562	14.5	(1)	85.5	0
North Texas Gulf	89,595	97.8	2.2	0	0
South Texas Gulf	655	80.9	19.1	0	0
Subtotal	1,115,796	22.0	.4	77.6	(1)
Pacific					
Columbia River	2,883	100.0	0	0	0
Puget Sound	8,477	100.0	0	0	0
California	16,055	64.5	2.7	0	32.8
Subtotal	27,415	79.2	1.6	0	19.2
Total receipts	1,739,436	36.8	11.2	50.3	1.7

[1]Less than 0.05 percent.

Table 3—Volume of corn received at domestic regions from interstate origins and transportation models, 1977[1]

Domestic destination	Quantity received	Modal share			
		Rail	Truck	Barge	Farm truck
	1,000 bushels	*Percent*			
Northeast	82,701	64.4	25.7	0	9.9
Applachian	104,409	61.1	20.8	0.8	17.3
Southeast	188,182	76.8	6.7	16.0	.5
Lakes States	66,815	9.2	79.7	0	11.1
Corn Belt	229,818	28.1	50.9	0	21.0
Delta States	163,305	83.0	13.3	3.7	0
Northern Plains	63,917	40.3	49.6	0	10.1
Southern Plains	35,498	54.3	45.7	0	0
Mountain	48,180	91.4	8.6	0	0
Pacific	95,206	99.4	.6	0	0
Total	1,079,110	60.5	27.8	3.4	8.3

[1]See footnote 2, table 1 for list of States in each region.

Table 2.--Corn: Marketing year supply, disappearance, area and prices, 1977-81

Year beginning October 1	Supply				Disappearance							Ending stocks Sept. 30		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages 1/	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned 2/	Privately owned 3/	Total
	Million bushels													
1977/78	885.9	6,505.0	2.6	7,393.5	500.0	70.4	19.5	3,744.4	4,334.3	1,947.8	6,282.1	13.1	1,098.3	1,111.4
1978/79	1,111.4	7,267.9	1.2	8,380.5	531.2	69.3	19.5	4,323.5	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80	1,303.9	7,938.8	1.1	9,243.8	582.8	72.2	20.0	4,518.7	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81 4/	1,617.5	6,644.8	1.2	8,263.5	641.8	73.1	20.2	4,139.2	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82*	1,034.0	8,201.0	1.3	9,236.3	691.8	73.0 (± 35)	20.2	4,250.0 (± 200)	5,035.0 (± 225)	2,175.0 (± 200)	7,210.0 (± 375)			2,026.3 (± 300)

Year beginning October 1	Area				Yield per harvested acre	Average prices				Government support program		
	National program	Set-aside and diverted	Planted	Harvested for grain		Received by farmers 5/	Chicago No. 2 Yellow	Omaha No. 2 Yellow	Gulf Ports No. 2 Yellow	National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1977/78	60.9	---	84.3	71.6	90.8	2.02	2.26	2.08	2.50	2.00	2.00	7/ 281
1978/79	76.2	6.1	81.7	71.9	101.0	2.25	2.54	2.28	2.81	2.00	2.10	8/ 683
1979/80	85.7	2.9	81.4	72.4	109.7	2.52	2.81	2.49	3.02	2.10	2.20	9/ 126
1980/81 4/	84.1	---	84.0	73.0	91.0	3.11	3.38	3.13	3.54	2.25	2.35	7/ 275
1981/82	81.0	---	84.2	74.6	109.9	2.40-2.55 6/	2.59 6/	2.42 6/	2.80	2.40	2.40	7/ 80

1/ Malt beverage and distilled liquor grain products converted to a corn basis. 2/ Uncommitted inventory. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Estimated. 5/ Excludes support payments. 6/ October 1981 thru January 1982 average. 7/ Disaster payments. 8/ Deficiency, disaster, and diversion payments. 9/ Disaster and diversion payments. *Reflects CRB estimate of 'root square error' for production and comparable estimates of variability for other items. Chances are about 2 out of 3 the final outcome would fall within the ranges.

Table 3.--Sorghum: Marketing year supply, disappearance, area and prices, 1977-81

Year beginning October 1	Supply				Disappearance							Ending stocks Sept. 30		
					Domestic use					Exports	Total disappearance	Govt. owned 1/	Privately owned 2/	Total
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total					
	Million bushels													
1977/78	91.0	780.9	---	871.9	6.0	3.6	2.0	456.3	467.9	213.5	681.4	13.1	177.4	190.5
1978/79	190.5	731.3	---	921.8	6.0	3.2	1.8	544.7	555.7	206.6	762.3	43.6	115.9	159.5
1979/80	159.5	808.9	---	968.4	6.0	5.0	2.0	484.0	497.0	324.9	821.9	43.9	102.6	146.5
1980/81 3/	146.5	579.2	---	725.7	5.0	4.0	2.0	307.4	318.4	298.7	617.1	38.2	70.4	108.6
1981/82*	108.6	880.3	---	988.9	5.0	4.0	2.0	400.0 (± 40)	411.0 (± 40)	275.0 (± 35)	686.0 (± 65)			302.9 (± 45)

	Area				Yield per harvested acre	Average prices				Government support program		
	National program	Set-aside and diverted	Planted	Harvested for grain		Received by farmers 4/	Kans. City No. 2 Yellow	Texas No. 2 Yellow	Gulf Ports No. 2 Yellow	National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per cwt.						Mil. dol.
1977/78	16.4	---	16.6	13.8	56.6	3.25	3.54	3.88	4.16	3.39	4.07	6/ 168
1978/79	13.7	1.4	16.2	13.4	54.5	3.59	4.00	4.40	4.65	3.39	4.07	7/ 243
1979/80	15.9	1.2	15.3	12.9	62.7	4.18	4.64	4.97	5.54	3.57	4.18	7/ 99
1980/81 3/	12.8	---	15.6	12.5	46.3	5.25	5.36	5.86	6.16	3.82	4.46	8/ 98
1981/82	13.9	---	16.0	13.7	64.1	4.02-4.20	5/ 4.25	5/ 4.70	5/ 5.10	4.07	4.55	6/ 225

1/ Uncommitted inventory. 2/ Includes quantity under loan and farmer-owned reserve. 3/ Estimated. 4/ Excludes support payments. 5/ October 1981 thru January 1982 average. 6/ Deficiency and disaster payments. 7/ Deficiency, disaster, and diversion payments. 8/ Disaster payments. *Reflects CRB estimate of 'root mean error' for production and comparable estimates of variability for other items. Chances are about 2 out of 3 the final outcome would fall within the ranges.

Table 4.--Barley: Marketing year supply, disappearance, area and prices, 1977-81

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Ending stocks May 31: Govt. owned 1/	Privately owned 2/	Total
	Million bushels													
1977/78	126.4	427.8	9.4	563.6	6.0	133.1	16.7	177.5	333.3	57.2	390.5	---	173.1	173.1
1978/79	173.1	454.8	10.5	638.4	6.0	147.5	13.6	217.6	384.7	25.7	410.4	2.5	225.5	228.0
1979/80	228.0	382.8	11.8	622.6	7.0	151.0	14.0	203.7	375.7	54.8	430.5	3.2	188.9	192.1
1980/81 3/	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82*	137.3	478.3	10.4	626.0	7.0	154.5 (± 5)	13.5	200.0 (± 25)	375.0 (± 25)	100.0 ± 15)	475.0 (± 35)			151.0 (± 30)

Year beginning June 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 4/	Minneapolis: No. 2 or better, feed	Minneapolis: No. 3 or better, malting	Portland: No. 2 Western	Government support program: National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1977/78	11.7	---	10.8	9.7	44.0	1.78	1.68	2.27	2.15	1.63	2.15	6/ 121
1978/79	7.5	0.8	10.0	9.2	49.2	1.92	1.80	2.38	2.10	1.63	2.25	7/ 97
1979/80	7.8	0.7	8.1	7.5	50.9	2.29	2.16	2.87	2.69	1.71	2.40	6/ 22
1980/81 3/	8.7	---	8.3	7.3	49.6	2.85	2.60	3.64	3.34	1.83	2.55	8/ 31
1981/82	10.2	---	9.7	9.2	52.3	2.45-2.55 5/	2.22 5/	3.06 5/	2.83	1.95	2.60	6/ 58

1/ Uncommitted inventory. 2/ Includes quantity under loan and farmer-owned reserve. 3/ Estimated. 4/ Excludes support payments. 5/ June 1981 thru January 1982 average. 6/ Deficiency and disaster payments. 7/ Deficiency, disaster, and diversion payments. 8/ Disaster payments. *Reflects CRB estimate of 'root mean square error' for production and comparable estimates of variability for other items. Chances are about 2 out of 3 the final outcome would fall within the ranges.

Table 5.--Oats: Marketing year supply, disappearance, area and prices, 1977-81

Year beginning June 1	Supply				Disappearance							Ending stocks May 31		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned 1/	Privately owned 2/	Total
	Million bushels													
1977/78	164.3	752.8	2.2	919.3	42.0	---	42.5	509.4	593.9	12.3	606.2	---	313.1	313.1
1978/79	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81 3/	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.5	174.4	176.9
1981/82*	176.9	508.1	1.0	686.0	41.0	---	34.0	435.0 (± 30)	510.0 (± 30)	10.0 (± 5)	520.0 (± 30)			166.0 (± 25)

Year beginning June 1	Area			Yield per harvested acre	Average prices				Government support payment		
	National program 4/	Set-aside and diverted 4/	Planted	Harvested for grain	Received by farmers 5/	Minneapolis: No. 2 White, heavy	Portland: No. 2 White heavy	Toledo: No. 2 White 6/	National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel					Mil. dol.
1977/78	---	---	17.7	13.5	55.8	1.10	1.27	1.44	1.40	1.03	---	---
1978/79	---	---	16.4	11.1	52.3	1.20	1.43	1.79	1.37	1.03	---	---
1979/80	---	---	14.0	9.7	54.4	1.36	1.57	1.87	1.60	1.08	---	---
1980/81 3/	---	---	13.4	8.7	53.0	1.79	2.04	2.42	2.17	1.16	---	---
1981/82	---	---	13.6	9.4	54.0	1.80-1.90 7/	2.11 7/	2.30 7/	2.18	1.24	---	---

1/ Uncommitted inventory. 2/ Includes quantity under loan and farmer-owned reserve. 3/ Estimated. 4/ Not included in the program. 5/ Excludes support payments. 6/ Prior to June 1981 reported for Chicago. 7/ June 1981 thru January 1982 average. *Reflects CRB estimate of 'root mean square error' for production and comparable estimates of variability for other items. Chances are about 2 out of 3 the final outcome would fall within the ranges.

Table 6.--Feed grains: Feed year supply and disappearance, specified periods, 1977-81 1/
(corn, sorghum, oats, barley)

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use					Exports	Total disappearance	Govt. owned 3/	Privately owned 4/	Total
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total					
	Million metric tons													
1977/78														
Oct.-Dec.	43.6	185.1	0.1	228.8	3.1	1.0	0.1	39.9	44.1	12.5	56.6	4/	172.2	172.2
Jan.-Mar.	172.2	---	0.1	172.3	3.3	1.2	0.3	34.1	38.9	12.3	51.2	4/	121.1	121.1
Apr.-May	121.1	---	4/	121.1	2.3	0.9	1.0	17.3	21.5	10.5	32.0	4/	89.1	89.1
June-Sept.	89.1	18.3	0.1	107.5	4.7	1.8	0.2	27.3	34.0	20.8	54.8	0.7	52.0	52.7
Feed year	43.6	203.4	0.3	247.3	13.4	4.9	1.6	118.6	138.5	56.1	194.6	0.7	52.0	52.7
1978/79														
Oct.-Dec.	52.7	203.2	0.1	256.0	3.6	1.2	0.1	45.1	50.0	12.9	62.9	3.0	190.1	193.1
Jan.-Mar.	193.1	---	0.1	193.2	3.2	1.2	0.3	39.0	43.7	12.6	56.3	3.7	133.2	136.9
Apr.-May	136.9	---	0.1	137.0	2.4	0.9	0.8	21.6	25.7	10.6	36.3	3.7	97.0	100.7
June-Sept.	100.7	16.0	0.1	116.8	5.2	1.7	0.2	30.4	37.5	23.8	61.3	3.7	51.8	55.5
Feed year	52.7	219.2	0.4	272.3	14.4	5.0	1.4	136.1	156.9	59.9	216.8	3.7	51.8	55.5
1979/80														
Oct.-Dec.	55.5	222.2	0.1	277.8	3.5	1.2	0.1	47.6	52.4	19.2	71.6	3.8	202.4	206.2
Jan.-Mar.	206.2	---	0.1	206.3	3.2	1.3	0.3	39.6	44.4	17.8	62.2	3.8	140.3	144.1
Apr.-May	144.1	---	4/	144.1	2.5	1.0	0.8	20.3	24.6	11.6	36.2	5.9	102.0	107.9
June-Sept.	107.9	14.5	0.1	122.5	6.5	1.9	0.2	30.4	39.0	23.1	62.1	7.7	52.7	60.4
Feed year	55.5	236.7	0.3	292.5	15.7	5.4	1.4	137.9	160.4	71.7	232.1	7.7	52.7	60.4
1980/81														
Oct.-Dec.	60.4	183.4	0.1	243.9	3.7	1.2	0.1	45.5	50.5	20.5	71.0	7.7	165.2	172.9
Jan.-Mar.	172.9	---	0.1	173.0	3.2	1.3	0.3	32.1	36.9	18.7	55.6	7.6	109.8	117.4
Apr.-May	117.4	---	4/	117.4	2.8	1.0	0.8	20.8	25.4	11.3	36.7	7.6	73.1	80.7
June-Sept.	80.7	17.8	0.1	98.6	7.5	1.8	0.2	24.8	34.3	18.8	53.1	7.1	38.4	45.5
Feed year	60.4	201.2	0.3	261.9	17.2	5.3	1.4	123.2	147.1	69.3	216.4	7.1	38.4	45.5
1981/82 5/														
Oct.-Dec.	45.5	230.6	0.1	276.2	4.1	1.3	0.1	49.1	54.6	16.6	71.2	7.4	197.6	205.0
Jan.-Mar.														
Apr.-May														
June-Sept.														
Feed year														

1/ Data may not add to totals due to independent rounding. 2/ Uncommitted inventory. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Less than 50,000 metric tons. 5/ Estimated.

Table 7.--Corn: Marketing year supply and disappearance, specified periods, 1977-81 1/

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use					Exports	Total disappearance	Govt. owned 3/	Privately owned 4/	Total
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages 2/	Seed	Feed and residual	Total					
	Million bushels													
1977/78														
Oct.-Dec.	885.9	6,505.0	0.7	7,391.6	115.0	15.7	---	1,290.3	1,421.0	418.3	1,839.3	0.2	5,552.1	5,552.3
Jan.-Mar.	5,552.3	---	0.9	5,553.2	120.0	17.0	3.9	1,088.4	1,229.3	414.5	1,643.8	0.2	3,909.2	3,909.4
Apr.-May	3,909.4	---	0.3	3,909.7	85.0	13.4	11.7	568.3	678.4	370.2	1,048.6	0.2	2,860.9	2,861.1
June-Sept.	2,861.1	---	0.7	2,861.8	180.0	24.3	3.9	797.4	1,005.6	744.8	1,750.4	13.1	1,098.3	1,111.4
Mkt. year	885.9	6,505.0	2.6	7,393.5	500.0	70.4	19.5	3,744.4	4,334.3	1,947.8	6,282.1	13.1	1,098.3	1,111.4
1978/79														
Oct.-Dec.	1,111.4	7,267.9	0.1	8,379.4	132.8	17.1	---	1,456.4	1,606.3	454.0	2,060.3	77.3	6,241.8	6,319.1
Jan.-Mar.	6,319.1	---	0.4	6,319.5	116.9	16.9	3.9	1,255.1	1,392.8	426.3	1,819.1	98.8	4,401.6	4,500.4
Apr.-May	4,500.4	---	0.2	4,500.6	90.3	13.0	11.7	711.2	826.2	387.2	1,213.4	100.6	3,186.6	3,287.2
June-Sept.	3,287.2	---	0.5	3,287.7	191.2	22.3	3.9	900.8	1,118.2	865.6	1,983.8	99.7	1,204.2	1,303.9
Mkt. year	1,111.4	7,267.9	1.2	8,380.5	531.2	69.3	19.5	4,323.5	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80														
Oct.-Dec.	1,303.9	7,938.8	0.3	9,243.0	128.2	16.3	---	1,549.4	1,693.9	662.9	2,356.8	99.7	6,786.5	6,886.2
Jan.-Mar.	6,886.2	---	0.3	6,886.5	116.6	18.4	4.0	1,308.2	1,447.2	582.0	2,029.2	101.2	4,756.1	4,857.3
Apr.-May	4,857.3	---	0.1	4,857.4	93.2	13.9	12.0	682.3	801.4	385.6	1,187.0	180.5	3,489.9	3,670.4
June-Sept.	3,670.4	---	0.4	3,670.8	244.8	23.6	4.0	978.8	1,251.2	802.1	2,053.3	256.3	1,361.2	1,617.5
Mkt. year	1,303.9	7,938.8	1.1	9,243.8	582.8	72.2	20.0	4,518.7	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81														
Oct.-Dec.	1,617.5	6,644.8	0.2	8,262.5	136.3	16.2	---	1,523.4	1,675.9	727.8	2,403.7	254.3	5,604.5	5,858.8
Jan.-Mar.	5,858.8	---	0.3	5,859.1	116.3	18.6	4.0	1,100.1	1,239.0	632.9	1,871.9	250.0	3,737.2	3,987.2
Apr.-May	3,987.2	---	0.1	3,987.3	106.7	13.8	12.2	684.7	817.4	395.7	1,213.1	251.6	2,522.6	2,774.2
June-Sept.	2,774.2	---	0.6	2,774.8	282.5	24.5	4.0	831.0	1,142.0	598.8	1,740.8	237.8	796.2	1,034.0
Mkt. year	1,617.5	6,644.8	1.2	8,263.5	641.8	73.1	20.2	4,139.2	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82 5/														
Oct.-Dec.	1,034.0	8,201.0	0.4	9,235.4	153.8	16.2	---	1,619.9	1,789.9	545.5	2,335.4	247.6	6,652.4	6,900.0
Jan.-Mar.														
Apr.-May														
June-Sept.														
Mkt. year														

1/ Data may not add to totals due to independent rounding. 2/ Malt beverage and distilled liquor grain products converted to a corn basis. 3/ Uncommitted inventory. 4/ Includes quantity under loan and farmer-owned reserve. 5/ Estimated.

Table 8.--Sorghum: Marketing year supply and disappearance, specified periods, 1977-81 1/

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages 2/	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned 3/	Privately owned 4/	Total
	Million bushels													
1977/78														
Oct.-Dec.	91.0	780.9	---	871.9	1.5	0.8	---	197.1	199.4	56.0	255.4	---	616.5	616.5
Jan.-Mar.	616.5	---	---	616.5	1.3	0.9	0.2	133.1	135.5	68.0	203.5	0.2	412.8	413.0
Apr.-May	413.0	---	---	413.0	1.5	0.6	1.2	54.8	58.1	35.8	93.9	0.2	318.9	319.1
June-Sept.	319.1	---	4/	319.1	1.7	1.3	0.6	71.3	74.9	53.7	128.6	13.1	177.4	190.5
Mkt. year	91.0	780.9	4/	871.9	6.0	3.6	2.0	456.3	467.9	213.5	681.4	13.1	177.4	190.5
1978/79														
Oct.-Dec.	190.5	731.3	---	921.8	1.4	1.1	---	235.7	238.2	46.6	284.8	36.6	600.4	637.0
Jan.-Mar.	637.0	---	---	637.0	1.6	0.4	0.2	149.2	151.4	68.3	219.7	42.4	374.9	417.3
Apr.-May	417.3	---	---	417.3	1.3	0.4	1.1	64.3	67.1	28.0	95.1	42.8	279.4	322.2
June-Sept.	322.2	---	4/	322.2	1.7	1.3	0.5	95.5	99.0	63.7	162.7	43.6	115.9	159.5
Mkt. year	190.5	731.3	4/	921.8	6.0	3.2	1.8	544.7	555.7	206.6	762.3	43.6	115.9	159.5
1979/80														
Oct.-Dec.	159.5	808.9	---	968.4	1.6	1.5	---	243.4	246.5	74.2	320.7	45.3	602.4	647.7
Jan.-Mar.	647.7	---	---	647.7	1.6	1.1	0.2	140.3	143.2	108.5	251.7	45.6	350.4	396.0
Apr.-May	396.0	---	---	396.0	1.4	0.5	1.2	54.7	57.8	60.3	118.1	45.6	232.3	277.9
June-Sept.	277.9	---	4/	277.9	1.4	1.9	0.6	45.6	49.5	81.9	131.4	43.9	102.6	146.5
Mkt. year	159.5	808.9	4/	968.4	6.0	5.0	2.0	484.0	497.0	324.9	821.9	43.9	102.6	146.5
1980/81														
Oct.-Dec.	146.5	579.2	4/	725.7	1.6	1.2	---	198.2	201.0	60.3	261.3	43.7	420.7	464.4
Jan.-Mar.	464.4	---	4/	464.4	1.6	0.9	0.2	63.8	66.5	84.1	150.6	43.5	270.3	313.8
Apr.-May	313.8	---	4/	313.8	0.8	0.7	1.2	84.9	87.6	41.7	129.3	43.8	140.7	184.5
June-Sept.	184.5	---	4/	184.5	1.0	1.2	0.6	-39.5	-36.7	112.6	75.9	38.2	70.4	108.6
Mkt. year	146.5	579.2	4/	725.7	5.0	4.0	2.0	307.4	318.4	298.7	617.1	38.2	70.4	108.6
1981/82 5/														
Oct.-Dec.	108.6	880.3	4/	988.9	1.6	1.0	---	229.1	231.7	77.8	309.5	38.4	641.0	679.4
Jan.-Mar.														
Apr.-May														
June-Sept.														
Mkt. year														

1/ Data may not add to totals due to independent rounding. 2/ Uncommitted inventory. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Less than 50,000 bushels. 5/ Estimated.

Table 9.--Barley: Marketing year supply and disappearance, specified periods, 1977-81 1/

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned 2/	Privately owned 3/	Total
	Million bushels													
1977/78														
June-Sept.	126.4	427.8	5.1	559.3	2.3	46.7	1.4	64.6	115.0	34.9	149.9	---	409.4	409.4
Oct.-Dec.	409.4	---	1.8	411.2	1.4	28.2	2.3	32.7	64.6	14.4	79.0	---	332.2	332.2
Jan.-Mar.	332.2	---	1.8	334.0	1.4	32.8	4.0	54.4	92.6	2.3	94.9	---	239.1	239.1
Apr.-May	239.1	---	0.7	239.8	0.9	25.4	9.0	25.8	61.1	5.6	66.7	---	173.1	173.1
Mkt. year	126.4	427.8	9.4	563.6	6.0	133.1	16.7	177.5	333.3	57.2	390.5	---	173.1	173.1
1978/79														
June-Sept.	173.1	454.8	2.7	630.6	2.3	52.5	1.1	83.8	139.7	18.8	158.5	0.8	471.3	472.1
Oct.-Dec.	472.1	---	2.8	474.9	1.4	33.0	1.9	42.7	79.0	4.7	83.7	1.4	389.8	391.2
Jan.-Mar.	391.2	---	3.0	394.2	1.4	35.5	3.3	56.8	97.0	0.8	97.8	2.3	294.1	296.4
Apr.-May	296.4	---	2.0	298.4	0.9	26.5	7.3	34.3	69.0	1.4	70.4	2.5	225.5	228.0
Mkt. year	173.1	454.8	10.5	638.4	6.0	147.5	13.6	217.6	384.7	25.7	410.4	2.5	225.5	228.0
1979/80														
June-Sept.	228.0	382.8	3.7	614.5	2.5	51.9	1.1	87.3	142.8	9.9	152.7	2.9	458.9	461.8
Oct.-Dec.	461.8	---	2.8	464.6	1.7	33.9	2.0	39.0	76.6	22.4	99.0	3.1	362.5	365.6
Jan.-Mar.	365.6	---	3.2	368.8	1.7	37.3	3.4	53.0	95.4	11.1	106.5	3.3	259.0	262.3
Apr.-May	262.3	---	2.1	264.4	1.1	27.9	7.5	24.4	60.9	11.4	72.3	3.2	188.9	192.1
Mkt. year	228.0	382.8	11.8	622.6	7.0	151.0	14.0	203.7	375.7	54.8	430.5	3.2	188.9	192.1
1980/81														
June-Sept.	192.1	361.0	3.5	556.6	2.5	56.6	1.2	78.9	139.2	24.9	164.1	3.5	389.0	392.5
Oct.-Dec.	392.5	---	2.3	394.8	1.7	33.9	2.2	32.2	70.0	21.4	91.4	3.5	299.9	303.4
Jan.-Mar.	303.4	---	2.7	306.1	1.7	36.0	3.7	38.6	80.0	22.7	102.7	3.4	200.0	203.4
Apr.-May	203.4	---	1.7	205.1	1.1	28.8	6.1	24.1	60.1	7.7	67.8	3.4	133.9	137.3
Mkt. year	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82 4/														
June-Sept.	137.3	478.3	2.4	618.0	2.5	51.3	1.2	79.4	134.4	32.6	167.0	3.3	447.7	451.0
Oct.-Dec.	451.0	---	2.4	453.4	1.7	39.0	2.2	45.0	87.9	33.0	120.9	3.3	329.2	332.5
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/ Data may not add to totals due to independent rounding. 2/ Uncommitted inventory. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Estimated.

Table 10.--Oats: Marketing year supply and disappearance, specified periods, 1977-81 1/

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned 2/	Privately owned 3/	Total
	Million bushels													
1977/78														
June-Sept.	164.3	752.8	1.1	918.2	14.4	---	2.1	219.5	236.0	2.7	238.7	---	679.5	679.5
Oct.-Dec.	679.5	---	0.5	680.0	10.7	---	2.1	92.4	105.2	6.8	112.0	---	568.0	568.0
Jan.-Mar.	568.0	---	0.4	568.4	10.1	---	8.5	126.5	145.1	1.5	146.6	---	421.8	421.8
Apr.-May	421.8	---	0.2	422.0	6.8	---	29.8	71.0	107.6	1.3	108.9	---	313.1	313.1
Mkt. year	164.3	752.8	2.2	919.3	42.0	---	42.5	509.4	593.9	12.3	606.2	---	313.1	313.1
1978/79														
June-Sept.	313.1	581.7	0.3	895.1	14.7	---	1.8	224.8	241.3	7.9	249.2	1.5	644.4	645.9
Oct.-Dec.	645.9	---	0.1	646.0	10.3	---	1.8	84.2	96.3	3.4	99.7	2.5	543.8	546.3
Jan.-Mar.	546.3	---	0.2	546.5	10.7	---	7.2	146.3	164.2	0.7	164.9	2.7	378.9	381.6
Apr.-May	381.6	---	0.1	381.7	5.3	---	25.3	70.4	101.0	0.7	101.7	2.7	277.3	280.0
Mkt. year	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80														
June-Sept.	280.0	526.6	0.3	806.9	14.6	---	1.7	221.6	237.9	0.9	238.8	2.6	565.5	568.1
Oct.-Dec.	568.1	---	0.2	568.3	10.4	---	1.7	77.5	89.6	1.9	91.5	2.6	474.2	476.8
Jan.-Mar.	476.8	---	0.2	477.0	10.3	---	6.9	119.7	136.9	0.5	137.4	2.7	336.9	339.6
Apr.-May	339.6	---	0.2	339.8	5.4	---	24.3	72.9	102.6	0.8	103.4	2.7	233.7	236.4
Mkt. year	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81														
June-Sept.	236.4	458.3	0.6	695.3	15.0	---	1.8	190.0	206.8	3.9	210.7	2.7	481.9	484.6
Oct.-Dec.	484.6	---	0.2	484.8	10.0	---	1.8	79.2	91.0	2.8	93.8	2.7	388.3	391.0
Jan.-Mar.	391.0	---	0.3	391.3	10.0	---	7.0	115.6	132.6	2.6	135.2	2.5	253.6	256.1
Apr.-May	256.1	---	0.2	256.3	6.0	---	22.4	47.0	75.4	4.0	79.4	2.5	174.4	176.9
Mkt. year	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.5	174.4	176.9
1981/82 4/														
June-Sept.	176.9	508.1	0.3	685.3	16.0	---	2.0	206.3	224.3	3.2	227.5	1.7	456.1	457.8
Oct.-Dec.	457.8	---	0.2	458.0	10.0	---	2.0	80.1	92.1	1.2	93.3	1.7	363.0	364.7
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/ Data may not add to totals due to independent rounding. 2/ Uncommitted inventory. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Estimated.

Table 11.--Average prices received by farmers, United States, by months, 1977-82

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average weighted by sales 1/
							Dollars per bushel						
Corn													
1977	1.67	1.88	1.97	2.00	2.03	2.15	2.24	2.29	2.28	2.16	2.01	1.98	2.02
1978	1.97	2.02	2.09	2.11	2.18	2.22	2.27	2.35	2.49	2.64	2.54	2.51	2.25
1979	2.41	2.27	2.38	2.45	2.39	2.40	2.36	2.42	2.49	2.73	2.92	3.01	2.52
1980	2.99	3.10	3.19	3.19	3.22	3.25	3.24	3.24	3.17	3.14	2.87	2.55	3.11
1981	2.45	2.34	2.39	*2.40									
							Dollars per 100 pounds						
Sorghum													
1977	2.80	3.03	3.05	3.15	3.20	3.39	3.62	3.66	3.64	3.50	3.37	3.22	3.25
1978	3.35	3.45	3.58	3.54	3.55	3.54	3.58	3.66	4.30	4.46	4.27	4.24	3.59
1979	3.90	3.99	3.90	4.05	3.98	4.05	3.96	4.04	4.49	4.95	5.12	5.12	4.18
1980	5.36	5.48	5.49	5.48	5.33	5.17	5.25	5.16	5.03	4.84	4.55	4.07	5.25
1981	3.90	3.87	3.95	*4.04									

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Average weighted by sales 1/
							Dollars per bushel						
Oats													
1977	1.29	1.02	0.93	0.94	1.04	1.10	1.13	1.18	1.22	1.17	1.19	1.24	1.10
1978	1.16	1.08	1.06	1.06	1.08	1.15	1.19	1.22	1.25	1.27	1.29	1.29	1.20
1979	1.35	1.33	1.24	1.29	1.31	1.41	1.31	1.39	1.37	1.34	1.38	1.43	1.36
1980	1.48	1.50	1.53	1.63	1.65	1.84	1.92	1.98	2.01	2.08	2.05	2.05	1.79
1981	1.99	1.82	1.73	1.74	1.78	1.88	1.94	*1.94					
Barley													
1977	1.93	1.53	1.53	1.69	1.63	1.82	1.79	1.90	1.98	1.90	1.93	2.15	1.78
1978	2.04	1.83	1.86	1.85	1.90	1.93	1.90	1.95	1.87	1.89	1.96	2.07	1.92
1979	2.30	2.22	2.23	2.33	2.32	2.40	2.32	2.27	2.23	2.18	2.15	2.21	2.29
1980	2.36	2.52	2.59	2.65	2.81	2.90	2.97	3.09	3.05	3.04	3.04	3.00	2.85
1981	2.94	2.41	2.37	2.44	2.38	2.49	2.48	*2.49					

Item and year beginning May 1	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average weighted by sales
							Dollars per ton						
Hay													
1977	68.10	61.30	56.80	52.50	50.00	48.20	48.40	49.50	50.50	51.80	51.40	51.40	53.70
1978	55.30	51.20	49.20	49.00	47.80	47.10	46.40	47.30	48.90	50.70	50.20	49.90	49.80
1979	65.60	58.00	56.00	57.50	59.00	60.80	58.90	60.10	59.10	60.00	57.40	60.10	59.50
1980	69.30	65.10	67.00	67.20	71.90	77.20	75.00	74.80	72.80	72.50	69.80	68.50	71.00
1981	77.10	69.80	65.70	63.90	62.90	64.00	64.10	65.90	68.70				

1/ Includes an allowance for unredeemed loans and purchase agreement deliveries valued at the average loan rate, by States; excludes government payments.
* Preliminary (mid-month price).

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 12.--Cash prices at principal markets, 1977-82

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple average
						Dollars per bushel							
CORN No. 2 Yellow, Chicago													
1977	1.84	2.14	2.19	2.19	2.21	2.36	2.51	2.57	2.51	2.28	2.17	2.13	2.26
1978	2.22	2.28	2.27	2.29	2.35	2.42	2.53	2.66	2.83	3.00	2.82	2.78	2.54
1979	2.73	2.59	2.69	2.54	2.65	2.60	2.61	2.70	2.70	3.08	3.36	3.44	2.81
1980	3.43	3.43	3.54	3.56	3.49	3.48	3.53	3.47	3.41	3.41	3.09	2.72	3.38
1981	2.61	2.60	2.52	*2.63									
CORN No. 2 Yellow, Omaha													
1977	1.79	2.02	2.04	2.02	2.03	2.14	2.25	2.34	2.33	2.13	1.98	1.95	2.08
1978	2.05	2.04	2.09	2.12	2.13	2.17	2.26	2.40	2.59	2.68	2.45	2.37	2.28
1979	2.37	2.32	2.36	2.26	2.33	2.23	2.32	2.43	2.50	2.81	2.98	3.01	2.49
1980	3.16	3.34	3.30	3.29	3.18	3.17	3.24	3.24	3.19	3.15	2.79	2.51	3.13
1981	2.44	2.39	2.37	*2.47									
SORGHUM No. 2 Yellow, Kansas City						Dollars per hundred weight							
1977	3.05	3.40	3.36	3.37	3.49	3.78	3.92	3.92	3.82	3.54	3.41	3.43	3.54
1978	3.61	3.67	3.64	3.71	3.73	3.77	3.81	3.92	4.41	4.89	4.44	4.34	4.00
1979	4.42	4.41	4.57	4.21	4.35	4.20	4.15	4.31	4.49	5.36	5.71	5.61	4.65
1980	5.65	5.91	5.82	5.79	5.52	5.46	5.49	5.38	5.23	5.29	4.58	4.16	5.36
1981	4.14	4.14	4.28	*4.44									

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per bushel							
OATS No. 2 Heavy White, Minneapolis													
1977	1.38	1.15	1.02	1.11	1.17	1.34	1.32	1.32	1.32	1.33	1.40	1.43	1.27
1978	1.36	1.24	1.28	1.36	1.39	1.47	1.40	1.47	1.54	1.60	1.48	1.55	1.43
1979	1.68	1.60	1.47	1.55	1.65	1.67	1.59	1.52	1.50	1.48	1.52	1.62	1.57
1980	1.67	1.80	1.70	1.86	1.96	2.15	2.16	2.20	2.25	2.23	2.21	2.23	2.04
1981	2.18	2.02	1.99	2.02	2.09	2.28	2.10	*2.23					
BARLEY No. 2 or Better Feed, Minneapolis													
1977	1.76	1.63	1.50	1.58	1.66	1.65	1.65	1.65	1.65	1.66	1.91	1.90	1.68
1978	1.84	1.71	1.68	1.77	1.81	1.88	1.79	1.71	1.69	1.86	1.89	1.96	1.80
1979	2.16	2.39	2.15	2.22	2.34	2.11	2.15	2.09	2.04	2.06	2.12	2.09	2.16
1980	2.15	2.48	2.39	2.43	2.77	3.03	2.75	2.81	2.90	2.63	2.51	2.39	2.60
1981	2.09	2.26	2.35	2.21	2.26	2.31	2.06	*2.20					
BARLEY No. 3 or Better Malting, 65% or Better Plump, Minneapolis													
1977	2.38	2.02	1.92	2.15	2.25	2.36	2.32	2.26	2.33	2.32	2.44	2.51	2.27
1978	2.39	2.13	2.19	2.27	2.26	2.47	2.40	2.30	2.33	2.46	2.59	2.73	2.38
1979	2.80	2.82	2.67	3.10	3.18	3.06	2.93	2.87	2.81	2.69	2.73	2.82	2.87
1980	2.99	3.36	3.27	3.63	3.80	3.88	3.77	3.75	3.83	3.71	3.84	3.80	3.64
1981	3.34	2.95	3.15	3.05	3.02	3.07	2.92	*3.00					

* Preliminary.

Source: Grain Market News, AMS, USDA.

Table 13.--Livestock, poultry and milk-feed price ratios, by months, 1977-82

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
HOG/CORN, U.S. Basis 1/													
1977	23.9	20.1	21.3	22.0	23.3	21.6	20.1	20.9	20.9	21.0	23.6	24.2	21.9
1978	25.8	23.4	23.0	24.0	24.1	21.8	19.4	18.4	15.9	14.4	14.3	14.8	19.9
1979	14.0	15.2	15.5	14.8	15.4	13.9	11.9	11.8	13.3	15.1	15.8	15.3	14.3
1980	15.8	14.7	13.8	12.8	12.8	11.9	12.0	12.6	15.0	15.7	17.1	19.1	14.4
1981 2/	18.4	17.7	16.3	18.3									
BEEF-STEER/CORN, Omaha 3/													
1977	23.6	20.7	21.1	21.6	22.2	22.7	23.3	24.5	23.8	25.6	26.5	27.8	23.6
1978	26.8	26.4	26.6	28.5	30.5	32.7	33.2	30.8	26.5	25.0	25.6	28.6	28.4
1979	27.8	28.9	28.8	29.4	29.0	30.0	27.6	26.6	26.6	25.3	24.3	23.1	27.3
1980	21.3	19.5	19.5	19.1	19.3	19.4	20.0	20.6	21.4	21.5	23.8	26.0	21.0
1981 2/	25.2	25.0	25.0	24.6									
MILK/FEED, U.S. Basis 4/													
1977	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.6	1.5
1978	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.5
1979	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.5
1980	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.7
1981 2/	1.5	1.6	1.6	1.6									
EGG/FEED, U.S. Basis 5/													
1977	7.1	7.3	7.4	6.7	7.5	7.4	6.7	6.3	5.6	6.4	7.0	7.3	6.9
1978	7.0	7.5	8.0	7.8	7.7	8.0	7.4	6.9	6.7	6.1	6.1	6.4	7.1
1979	6.1	6.8	7.3	6.6	5.9	6.3	6.0	5.3	5.5	5.7	6.0	6.2	6.1
1980	5.7	6.0	6.6	5.9	5.7	5.7	6.0	5.2	5.2	5.5	5.7	6.4	5.8
1981 2/	6.5	7.2	6.7	6.6									
BROILER/FEED, U.S. Basis 6/													
1977	3.0	2.7	2.6	2.8	3.0	3.0	3.3	3.3	3.5	3.7	3.1	3.1	3.1
1978	2.9	2.8	2.9	3.1	3.3	3.1	3.0	3.2	2.9	2.5	2.3	2.4	2.9
1979	2.2	2.6	2.6	2.8	2.6	2.5	2.3	2.5	2.6	3.3	3.0	2.9	2.7
1980	2.8	2.5	2.5	2.5	2.6	2.6	2.3	2.4	2.5	2.6	2.6	2.4	2.5
1981 2/	2.4	2.4	2.3	2.6									
TURKEY/FEED, U.S. Basis 7/													
1977	4.3	4.5	4.5	4.3	4.2	4.3	4.2	4.3	4.4	4.5	4.8	4.9	4.4
1978	5.0	5.1	5.4	5.0	4.6	4.3	4.3	4.2	3.9	3.5	3.7	3.7	4.4
1979	3.9	4.5	4.3	3.8	3.6	3.5	3.4	3.1	3.1	3.5	3.5	3.7	3.7
1980	3.9	3.8	3.5	3.1	3.1	3.2	3.0	3.1	3.2	3.3	3.3	3.1	3.3
1981 2/	2.8	3.1	2.9	2.9									

1/ Number bushels of corn equal in value to 100 pounds of hog liveweight.
2/ Preliminary.
3/ Based on price of beef-steers 900-1,100 pounds, choice instead of average grade all steers previously published.
4/ Pounds 16% dairy feed equal in value to one pound whole milk.
5/ Number of pounds of laying feed equal in value to one dozen eggs.
6/ Number of pounds of broiler grower feed equal in value to one pound broiler liveweight.
7/ Pounds of turkey grower feed equal in value to one pound turkey liveweight.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 14.--Price trends, selected feeds and corn products

Item	Unit	Oct.-Sept. 1980/81 1/	1981				1982
			September	October	November	December	January
WHOLESALE, MOSTLY BULK 2/							
Soybean meal, 44%, solvent, Decatur	Dol./short ton	218	190	180	178	188	191
Soybean meal, high protein, Decatur	"	235	207	196	193	202	205
Cottonseed meal, 41%, expeller, Memphis	"	198	167	150	151	179	185
Linseed meal, 34%, solvent, Minneapolis	"	161	150	150	150	150	149
Peanut meal, 50%, S.E. mills	"	236	---	---	182	194	199
Meat meal, 50%, Illinois Product Points	"	250	235	228	217	208	206
Fishmeal, 65%, domestic, East Coast	"	427	378	384	370	354	370
Gluten feed, 60%, Chicago	"	120	109	110	110	114	117
Gluten meal, 60%, Chicago	"	269	260	245	244	261	275
Brewers' dried grains, 24%, Chicago	"	116	100	109	118	99	103
Distillers' dried grains, 28%, Lawrenceburg	"	162	150	151	154	148	146
Feather meal, Jackson, Mississippi	"	268	237	236	237	240	247
Wheat bran, Kansas City	"	103	90	97	91	104	80
Wheat middlings, Kansas City	"	103	90	97	91	104	80
Rice bran, Arkansas	"	80	61	59	65	81	85
Hominy feed, Illinois Points	"	105	88	88	83	80	82
Alfalfa meal, 17%, dehy., Kansas City	"	122	106	109	110	110	109
Cane molasses, New Orleans	"	99	68	59	52	50	50
Molasses beet pulp, Los Angeles	"	132	116	109	109	112	117
Animal fat, Chicago	"	15.9	15.1	14.6	14.4	14.1	14.0
Urea, 42%, N., Fort Worth	"	221	225	225	225	225	225
Corn, No. 2, white, Kansas City	Dol./bu.	4.96	2.85	2.65	2.61	2.58	2.59
PRICES PAID, U.S. BASIS 3/							
Soybean meal, 44%	Dol./cwt.	15.38	14.40	14.00	13.70	13.80	13.70
Cottonseed meal, 41%	"	15.23	14.90	14.50	13.90	13.80	13.70
Wheat bran	"	10.35	10.10	9.93	9.99	9.91	10.10
Wheat middlings	"	9.96	9.56	9.44	9.61	9.59	9.75
Broiler grower feed	Dol./short ton	233	222	214	213	210	211
Laying feed	"	214	203	197	194	196	193
Turkey grower feed	"	254	248	239	233	229	224
Chick starter	"	279	229	220	218	213	214
Dairy feed, 16%	"	196	185	183	179	182	181
Beef cattle concentrate, 32-36%	Dol./cwt.	12.33	12.00	11.50	11.30	11.60	11.60
Hog concentrate, 38-42%, protein	"	16.43	15.50	15.20	15.00	15.10	15.10
Stock salt	"	5.63	5.89	5.87	5.93	5.90	5.95
CORN PRODUCTS, WHOLESALE 4/							
Corn meal, New York White	Dol./cwt.	19.67	17.87	16.10	13.74	13.96	14.02
Yellow	"	13.27	11.66	11.59	11.30	11.47	11.53
Grits (brewers') Chicago	"	10.59	9.20	9.06	8.87	8.86	8.89
Syrup, Chicago West	Cts./lb.	16.64	16.05	15.46	15.24	14.44	14.03
Sugar (dextrose), Chicago, West	"	28.78	25.00	25.00	25.00	25.00	25.00
High-fructose (dry weight tank car) Chicago West	"	23.76	19.72	19.72	19.72	18.59	14.08
Corn starch (f.o.b. Midwest)	Dol./cwt.	11.78	11.80	10.50	10.50	10.05	10.10

1/ Preliminary. 2/ Grain and Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Agricultural Prices, CRB, USDA. 4/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Table 15.--Feed grain support loan status, 1977-81 crops, as of February 17, 1982

Item	Placed under loan	Redeemed by farmers	Delivered to CCC	In reserve program 1/	Loans outstanding	Total in reserve and loans outstanding 1/
			Million bushels			
CORN						
1977	1,159	689	94	53	0	53
1978	642	582	2	35	1	36
1979	557	524	2/	33	2/	33
1980	840	731	18	28*(45)	17	90
1981	1,744	25	0	1,000	718	1,718
SORGHUM						
1977	217	133	41	1	0	1
1978	92	87	5	0	0	0
1979	64	64	0	0	0	0
1980	32	21	1	9	2	11
1981	257	10	0	189	58	247
OATS						
1977	83	56	3	2	0	2
1978	25	25	2/	2/	0	2/
1979	12	12	0	0	0	0
1980	6	6	0	0	0	0
1981	9	2	0	0	7	7
BARLEY						
1977	87	65	3	1	0	1
1978	68	63	2/	4	2/	4
1979	30	28	0	3	0	3
1980	31	26	0	5	2	7
1981	54	8	0	7	39	46

1/ Reserve corn for 1980 and earlier crops have been called. Reserves for 1981 feed grain crops and 1980 crops remaining under loan were open on October 6.

2/ Less than 500,000 bushels.

*Extended loans in reserve.

SOURCE: Agricultural Stabilization and Conversation Service.

Table 16.--Hay (all): Acreage, supply, and disappearance, 1976-81

Item	Unit	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82 1/
Acreage harvested	Mil. acres	60.4	61.0	62.1	61.7	59.4	60.2
Yield per acre	Tons	1.99	2.17	2.32	2.40	2.21	2.38
Carryover (May 1)	Mil. short tons	25.5	19.5	24.2	30.1	33.3	25.4
Production	"	120.1	132.2	143.8	147.8	131.0	143.1
Supply	"	145.6	151.7	168.0	177.9	164.3	168.6
Disappearance	"	126.1	127.5	137.9	144.6	138.9	---
Roughage-Consuming Animal Units (RCAU)	Mil. units	94.8	89.5	86.0	87.5	90.6	93.2
Supply per RCAU	Tons	1.54	1.70	1.95	2.03	1.81	1.81
Disappearance per RCAU	"	1.33	1.42	1.60	1.65	1.53	---

1/ January 1982 crop indications.

Table 17.--Hay production, pasture-range index (August 1), and prices received by farmers, 1976-81

Year	Northeast	Lake States	Corn Belt	Northern Plains	Appalachin	Southeast	Delta States	Southern Plains	Mountain	Pacific	United States 1/
						Thousand tons					
1976											
Hay production	12,247	16,951	20,800	17,454	7,454	2,912	3,156	8,317	18,334	12,500	120,125
Pasture-range index	79	49	68	55	77	78	78	78	77	73	70
1977											
Hay production	11,055	22,993	22,748	22,320	7,390	2,651	3,403	8,900	18,057	12,694	132,211
Pasture-range index	67	66	65	71	62	44	63	64	65	54	64
1978											
Hay production	12,645	24,298	24,382	26,793	8,361	3,118	3,525	8,568	19,761	12,366	143,817
Pasture-range index	77	89	86	87	85	72	71	51	82	93	77
1979											
Hay production	12,748	25,298	24,465	26,678	8,308	3,429	3,910	11,099	19,555	12,357	147,847
Pasture-range index	77	85	85	84	93	88	89	85	76	75	84
1980											
Hay production	12,707	23,504	21,861	19,063	7,929	2,673	2,873	7,830	19,248	13,339	131,027
Pasture-range index	74	73	66	42	74	64	56	41	76	91	60
1981											
Hay production 2/	12,727	23,155	24,204	23,782	8,475	3,070	3,860	10,266	20,287	13,279	143,105
Pasture-range index	84	82	90	76	88	65	82	78	78	89	82

Mid-December prices	Pennsylvania	Wisconsin	Iowa	Kansas	Georgia	Arkansas	Texas	Colorado	California	United States
						Dollars per ton				
1976	56.50	78.00	69.00	54.50	55.00	47.50	49.00	56.00	72.00	59.00
1977	73.50	48.50	43.50	38.50	62.00	38.00	52.00	54.50	48.50	49.50
1978	61.50	35.00	44.50	49.50	57.50	43.00	58.00	49.00	60.50	47.30
1979	57.50	29.00	51.50	48.00	51.50	47.50	61.00	53.50	97.00	60.10
1980	80.00	39.00	50.50	72.00	71.00	54.00	83.00	71.50	101.00	74.80
1981	85.00	68.00	55.00	63.00	---	78.00	59.00	---	64.00	65.90

1/ U.S. price weighted by regional production. 2/ January 1982 crop indications.

Source: Crop Reporting Board, USDA.

Table 18.--High-protein feed: Quantity fed and high-protein animal units, 1974-81 1/

Year beginning October	Quantity fed (in terms of 44% protein soybean meal equivalent)				High-protein animal units	Per animal unit
	Oilseed meal	Animal protein	Grain protein	Total		
	1,000 metric tons				Million	Pounds
1974	13,820	2,817	1,225	17,862	96.7	407
1975	16,495	2,918	1,335	20,748	100.7	454
1976	15,118	3,126	1,193	19,437	102.9	416
1977	17,259	3,035	982	21,276	104.5	449
1978	18,472	2,829	1,069	22,370	108.0	456
1979	20,152	2,841	1,609	24,602	114.6	473
1980 2/	18,365	2,863	1,018	22,246	113.9	431
1981 3/	18,979	2,838	1,030	22,847	110.5	456

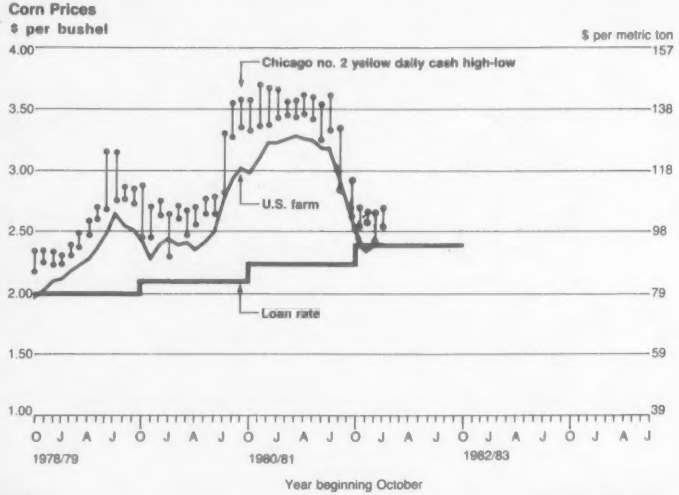
1/ Excludes urea and other nitrogenous compounds.
2/ Preliminary.
3/ Forecast.

Table 19.--Processed feeds: Quantity fed, 1974-81 1/

Feed	Year beginning October							
	1974	1975	1976	1977	1978	1979	1980 2/	1981 3/
	1,000 metric tons							
HIGH-PROTEIN								
Oilseed meal								
Soybean 4/	11,387	14,164	12,751	14,766	15,758	17,113	15,646	16,012
Cottonseed	1,675	1,148	1,412	1,780	1,534	1,641	1,395	1,628
Linseed	85	79	117	79	122	146	117	100
Peanut	137	284	184	92	93	108	85	114
Sunflower	---	---	---	---	180	359	40	430
Total	13,284	15,675	14,464	16,717	17,687	19,367	17,683	18,284
Animal proteins								
Tankage and meat meal	1,797	1,815	1,996	2,105	1,688	1,728	1,972	1,395
Fishmeal and solubles	403	461	368	379	359	337	342	340
Commercial dried milk products	5/136	147	145	178	144	144	146	150
Noncommercial milk products	5/169	174	172	177	140	132	137	130
Total	2,505	2,597	2,681	2,839	2,331	2,341	2,597	2,015
Grain protein feeds								
Gluten feed and meal	1,216	1,340	942	1,109	1,014	566	630	700
Brewers' dried grains	314	291	270	256	262	379	361	370
Distillers' dried grains	307	363	339	366	421	554	580	1,073
Total	1,837	1,994	1,551	1,731	1,697	1,500	1,571	2,143
OTHER								
Wheat millfeeds	4,257	4,475	4,532	4,509	4,482	4,150	3,810	4,100
Rice millfeeds	523	496	546	501	568	472	470	450
Dried and molasses beet pulp	1,202	1,688	1,597	1,361	1,450	1,292	1,300	1,090
Alfalfa meal	1,426	1,424	1,090	1,358	1,244	1,179	1,000	1,100
Fats and oils	579	633	656	667	630	635	630	544
Molasses, inedible	3,058	3,700	3,575	3,250	3,100	2,812	3,251	2,540
Miscellaneous byproduct feeds 6/	998	998	998	998	1,000	907	1,000	1,425
Total	12,043	13,414	12,994	12,644	12,474	11,447	11,461	11,249
Grand Total	26,669	33,680	31,690	33,931	36,189	34,655	33,312	33,691

1/ Adjusted for stocks, production, foreign trade and nonfeed uses where applicable.
2/ Preliminary.
3/ Forecast.
4/ Includes use in edible soy products and shipments to U.S. territories.
5/ Beginning 1974 not comparable with earlier years.
6/ Allowance for hominy feed, oat millfeeds and screenings.

Corn Prices



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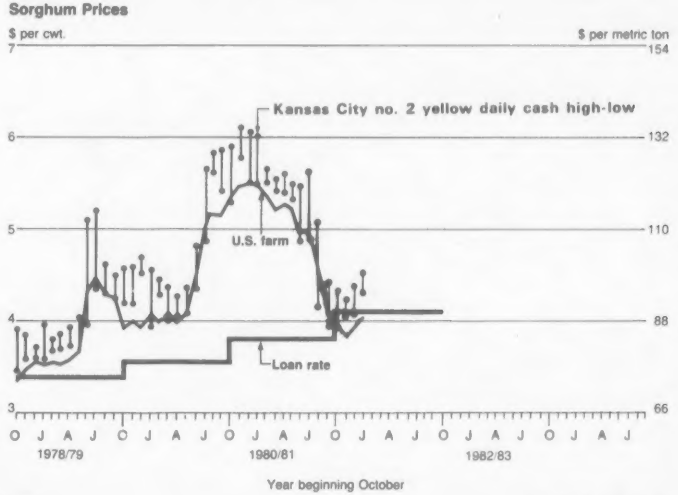
Sorghum Prices



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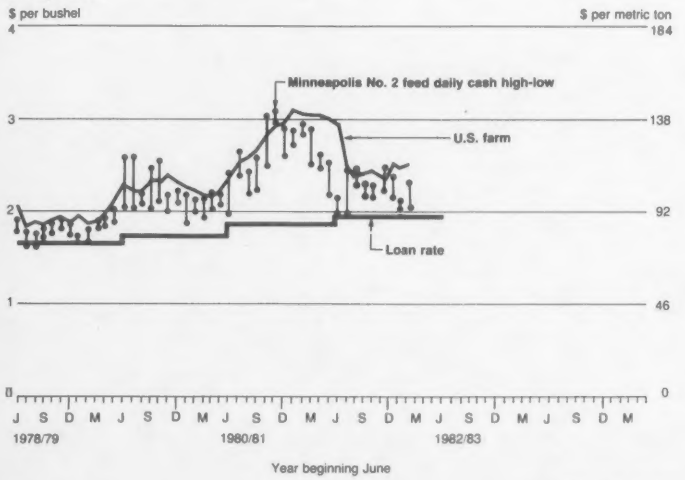
Barley Prices



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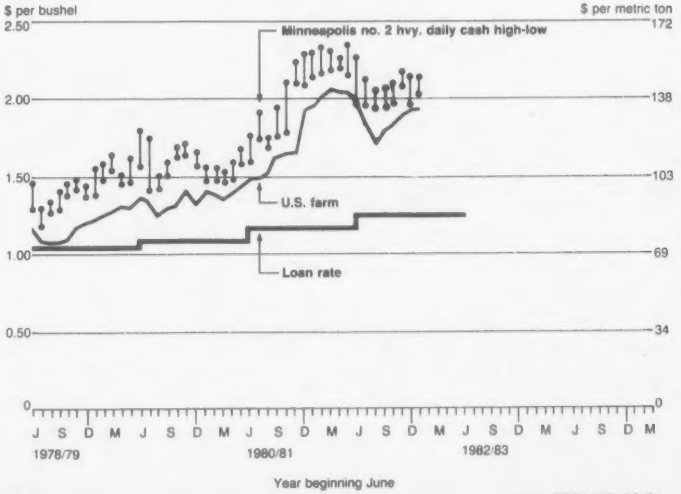
Oat Prices



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